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COUNCIL PAPER, No. 26. F. 48/4/19.

ANNUAL

MEDICAL AND HEALTH REPORT

FOR THE YEAR

1935.

Laid on the Table, 23 October, 1936.

BY AUTHORITY: H. R. CRAIGIE, ACTING GOVERNMENT PRINTER, SUVA.—1936.

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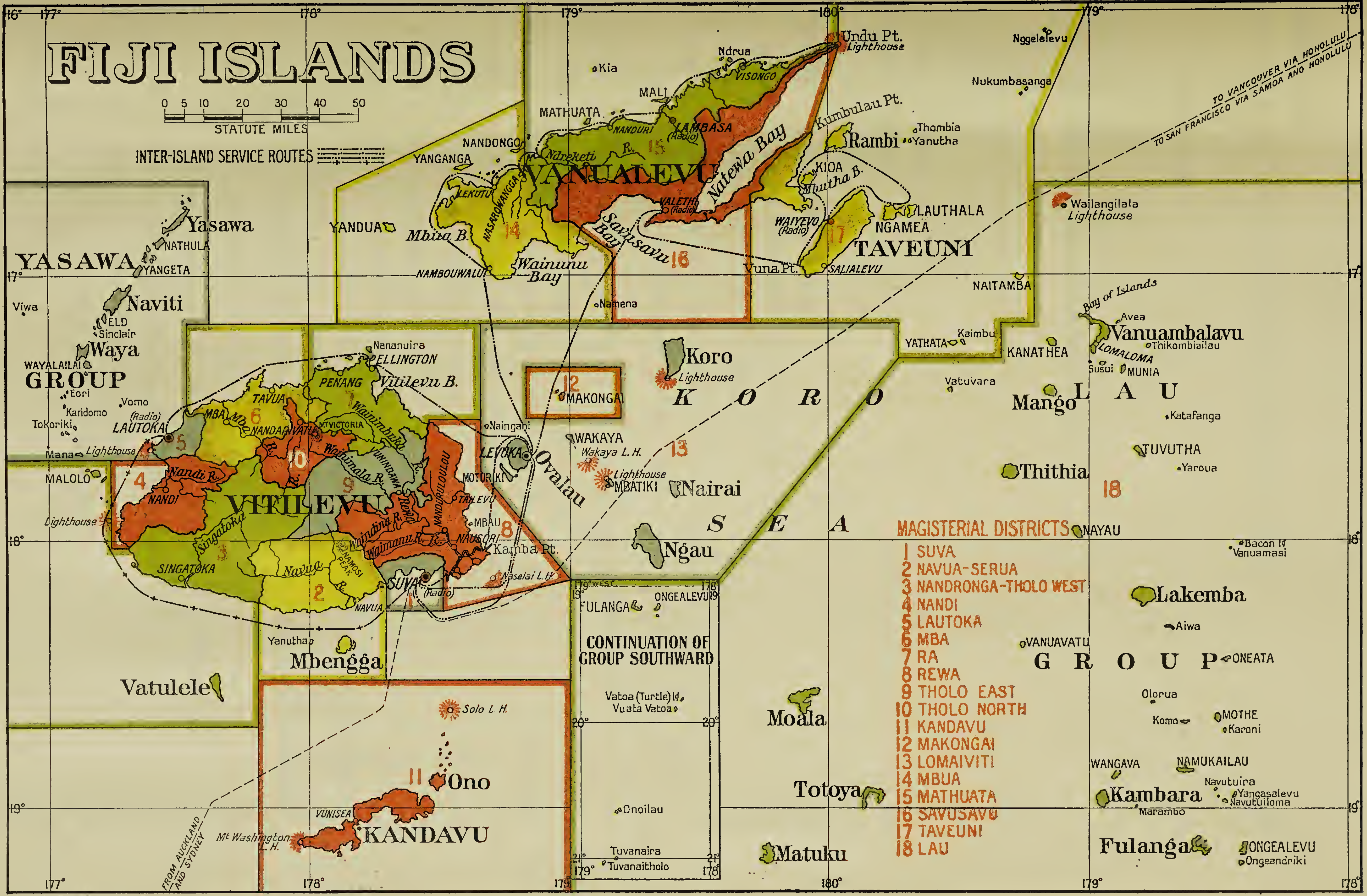

Lands Department, Suva.

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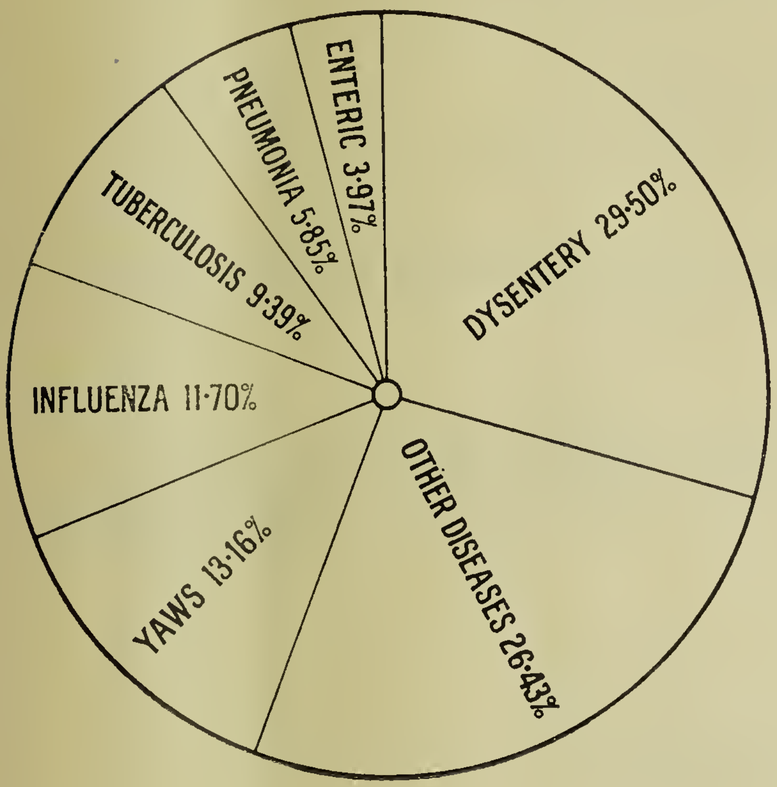
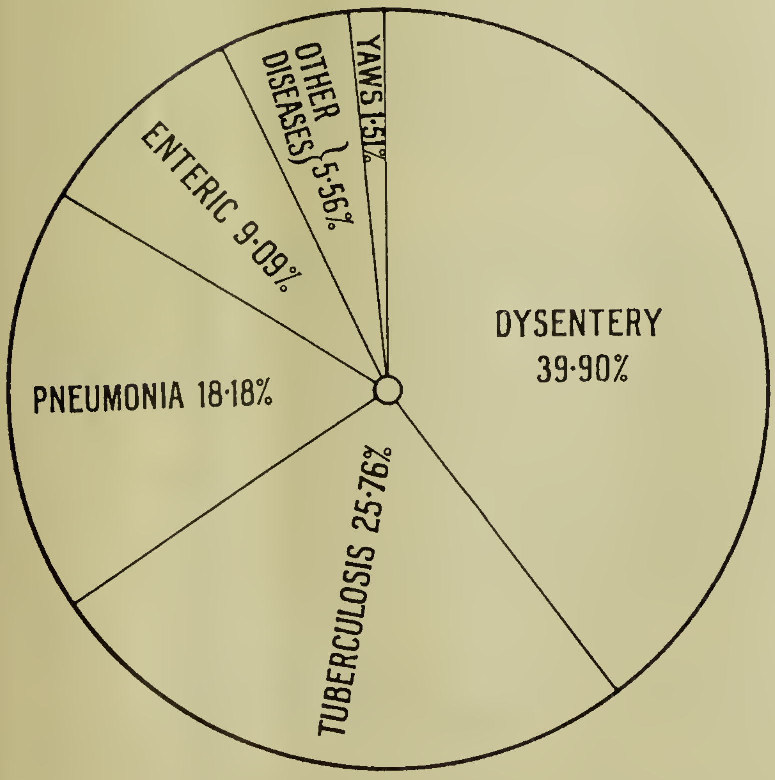
INFECTIVE DISEASES.

TOTAL INCIDENCE, 2,546.

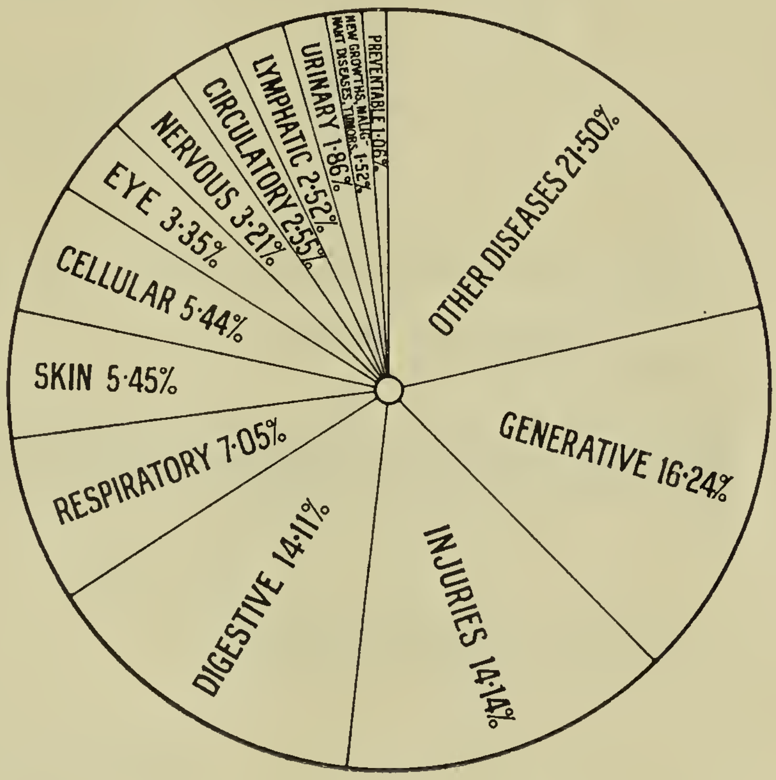


TOTAL DEATHS, 198.

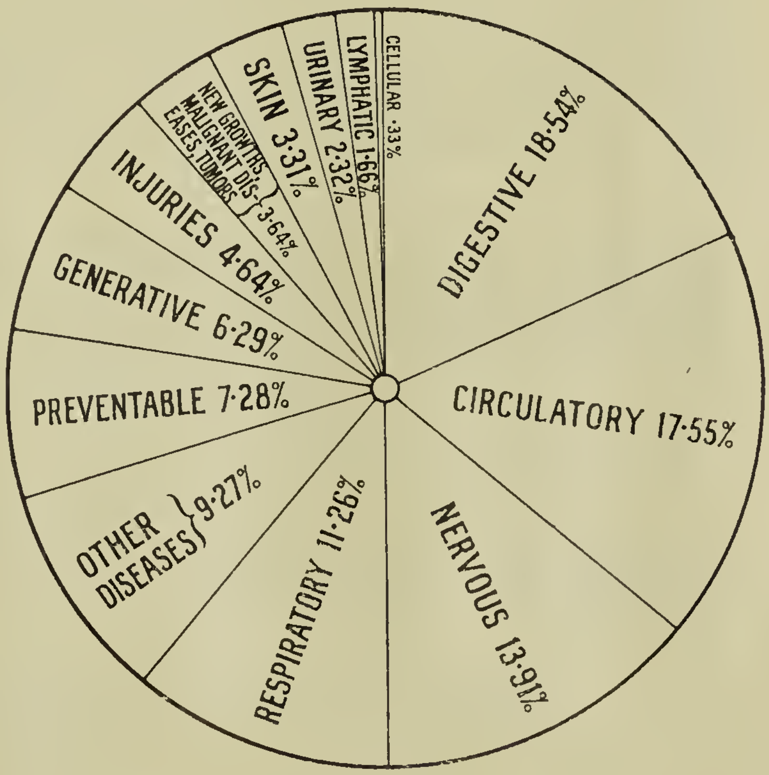


GENERAL SYSTEMIC AND PREVENTABLE DISEASES.

TOTAL CASES, 7,376.



TOTAL DEATHS, 302.



1936.

LEGISLATIVE COUNCIL,
FIJI.

COUNCIL PAPER, No. 26.

Medical Department

(Annual Medical Report for the year ending the 31st December, 1935.)

Laid on the Table, 23 *October*, 1936.

The Director of Medical Services to The Hon. the Acting Colonial Secretary.

Medical Department,
Suva, 3rd July, 1936.

Sir,

I have the honour to submit, for the information of His Excellency the Governor, and for transmission to the Right Honourable the Secretary of State, the Medical Report on the Health and Sanitary conditions prevailing in the Colony of Fiji for the year 1935, together with the returns appended thereto.

I have, &c.,

A. H. B. PEARCE,
Director of Medical Services.

I.—ADMINISTRATION.

A.—STAFF.

Appointments.—Miss M. M. Rial, Staff Sister, Colonial War Memorial Hospital, 1st January; Miss M. M. St. John, Probationer Nurse, Colonial War Memorial Hospital, 1st February; Miss P. J. Seagar, Probationer Nurse, Colonial War Memorial Hospital, 27th July; H. F. Leaver, Temporary Assistant Attendant, Public Lunatic Asylum, 1st March; Miss N. H. Retemeyer, Sister, Colonial War Memorial Hospital, 5th March; Miss E. E. Hollands, Sister, Colonial War Memorial Hospital, 25th June; Miss J. M. Soden, Probationer Nurse, Colonial War Memorial Hospital, 25th June; Miss W. Delugar, Sister, Colonial War Memorial Hospital, 27th July; Rev. Sister Mary Antoinette, Nursing Sister, Makongai Leper Hospital, 24th September; Rev. Sister Mary Arthur, Nursing Sister, Makongai Leper Hospital, 24th September; Dr. W. M. Ramsay, Acting Chief Medical Officer, 16th August to 23rd September; Miss E. M. Southey, Probationer Nurse, Colonial War Memorial Hospital, 15th December; Miss K. V. Douglas, Probationer Nurse, Colonial War Memorial Hospital, 19th December; Dr. D. C. M. Macpherson, District Medical Officer, 19th February.

Resignations.—Rev. Sister Mary Adele, Nursing Sister, Makongai Leper Hospital, 30th September; Rev. Sister Mary Hilda, 26th May; Miss E. F. Jacomb, Probationer Nurse, Colonial War Memorial Hospital, 1st July; Miss V. E. Brahne, Sister, Colonial War Memorial Hospital, 1st August; Miss G. B. E. Wratt, Probationer Nurse, Colonial War Memorial Hospital, 5th August; Miss J. McRae, Probationer Nurse, Colonial War Memorial Hospital, 3rd October; Miss J. M. Soden, Probationer Nurse, Colonial War Memorial Hospital, 26th November.

B—ORDINANCES AFFECTING PUBLIC HEALTH AND THE MEDICAL SERVICES ENACTED DURING THE YEAR.

The following Proclamation, Ordinance, Regulations and By-laws were passed during the year:—

Proclamation :—

No. 6 of 1935, declaration of Whooping Cough to be an infectious disease.

Ordinance :—

No. 29 of 1935 relating to Public Health.

Regulations :—

Regulations made under the Quarantine Ordinance 1928 amending Regulations relating to Quarantine Signals.

Regulations made under the Public Hospitals Ordinance 1884 amending Regulations relating to payment of fees by in-patients who are not *bona fide* residents of the Colony.

Regulations made under the Quarantine Ordinance 1928 amending Regulations governing Bills of Health.

Regulations made under the Public Hospitals Ordinance 1884 relating to the free treatment of Returned Sailors and Soldiers and their dependants at the Colonial War Memorial Hospital, Levuka Hospital, Lautoka Hospital, and Lambasa Hospital.

By-laws :—

Suva Municipal Council defining Standard of Milk.
Mba Rural Dwelling-houses By-laws.
Tavua Rural Dwelling-houses By-laws.
Tavua Privies By-laws.

C—FINANCIAL.

The total expenditure under the two heads, Medical and Hospital, was:—

	1933.	1934.	1935.
Personal emoluments	£38,510 1 1	£38,974 10 2	£40,468 7 4
Other charges ..	32,517 12 2	35,505 19 10	37,583 17 10
Totals ..	£71,027 13 3	£74,480 10 0	£78,052 5 2

The revenue creditable to the Medical Department was:—1933, £9,429 7s. 5d.; 1934, £9,383 19s. 3d. 1935, £10,374 3s. 2d.

The daily cost per patient at the Medical Institutions of the Colony in 1934 and 1935 was respectively:—

	1934.		1935.	
	s.	d.	s.	d.
Colonial War Memorial Hospital . ..	6	0·6	5	8·1
Lautoka Hospital	3	9·2	3	9·1
Levuka Hospital	6	5	4	10·2
Lambasa Hospital	4	5·6	4	0·7
Public Lunatic Asylum	2	3·2	2	5·5
Central Leper Hospital	1	7·5	1	5·2
Provincial Hospitals	1	4·8	1	6·1
Nandi.	3	5·1	2	0·8
Penang	3	8.8	3	1·1

Further details are given in Appendixes A to C.

The Revenue of the Colony for 1935 amounted to £733,431 19s. 11d. Of this sum, £78,052 5s. 2d. was expended on Medical Services. The Revenue received amounted to £10,374 3s. 2d. The net cost, therefore, was £67,678 2s. 0d., or 9·2 per cent. of the total revenue.

II.—PUBLIC HEALTH.

I.—GENERAL REMARKS.

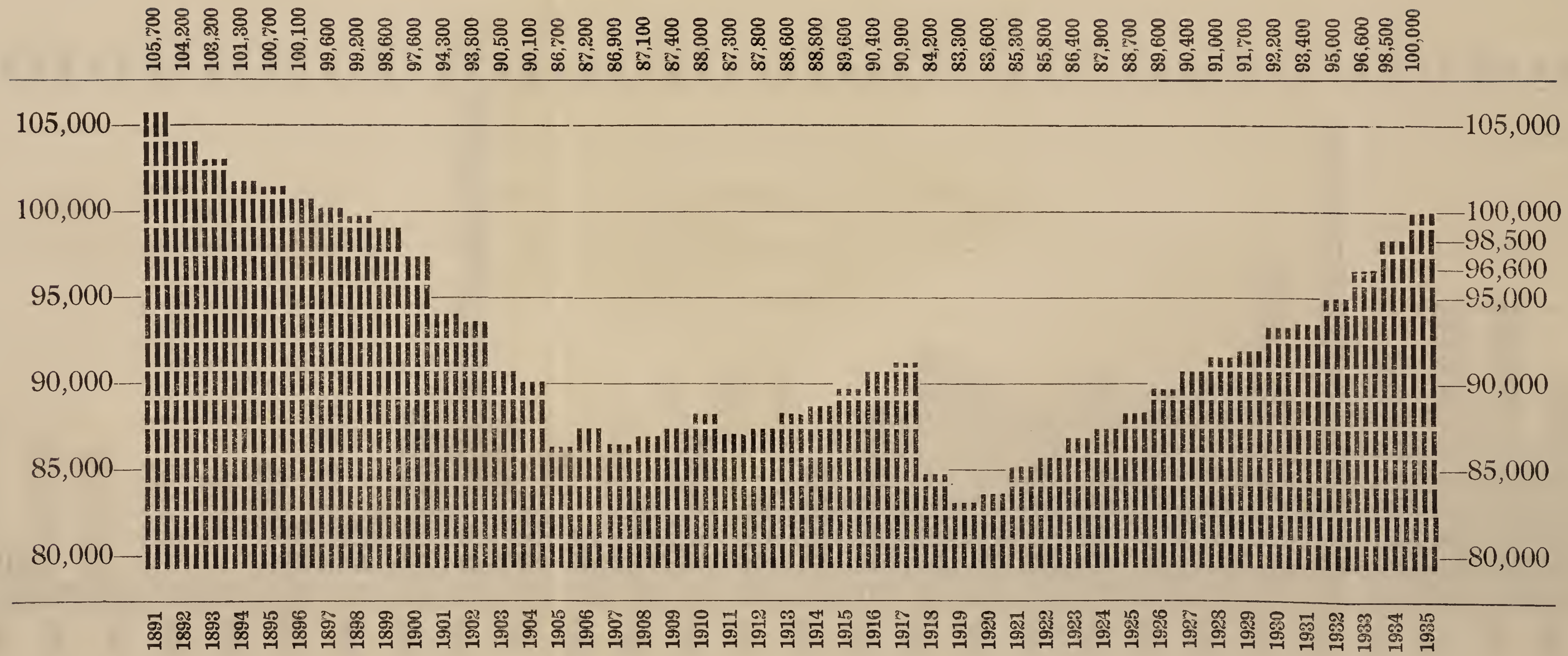
An important piece of Public Health legislation was enacted by the Legislative Council in November, it being considered desirable to bring the legislation relating to public health more into line with that of other Colonies, and of the neighbouring Dominions. This Ordinance, accordingly, replaces the Public Health Ordinance 1911.

Under the old Ordinance, the Colony was divided into Urban and Rural Sanitary districts, the former comprising municipalities, and the latter those parts of the Colony outside the municipalities. The new Ordinance now divides the Colony into Urban Sanitary, Township Sanitary, and Rural Sanitary districts. There has been no alteration in the definition of Urban Sanitary districts, while Township Sanitary districts comprise all towns proclaimed as townships under the Townships Ordinance 1928. The Rural Sanitary districts, which embrace the remaining parts of the Colony, are particularly defined in the Schedule. Another change effected by the Ordinance is that made in the method of enacting subsidiary legislation. The old Ordinance empowered local authorities to make by-laws relating to specified health matters in their districts, but under the new Ordinance this power has been vested in the Central Board of Health which is thus given the power to make regulations applying to the whole Colony. The local authorities, however, may frame the regulations applying to their districts for submission to the Board, so that in practice there will be very little difference in the procedure, except that the Board will have more effective supervision over the making of regulations and, as a result, there will be greater uniformity than there has been in the past.

The part of the new Ordinance relating to the protection of food from contamination has been adopted from the Pure Food Regulations already in force, and is considered adequate to cover the handling of all articles of food both in the course of manufacture and of sale.

GRAPH A.

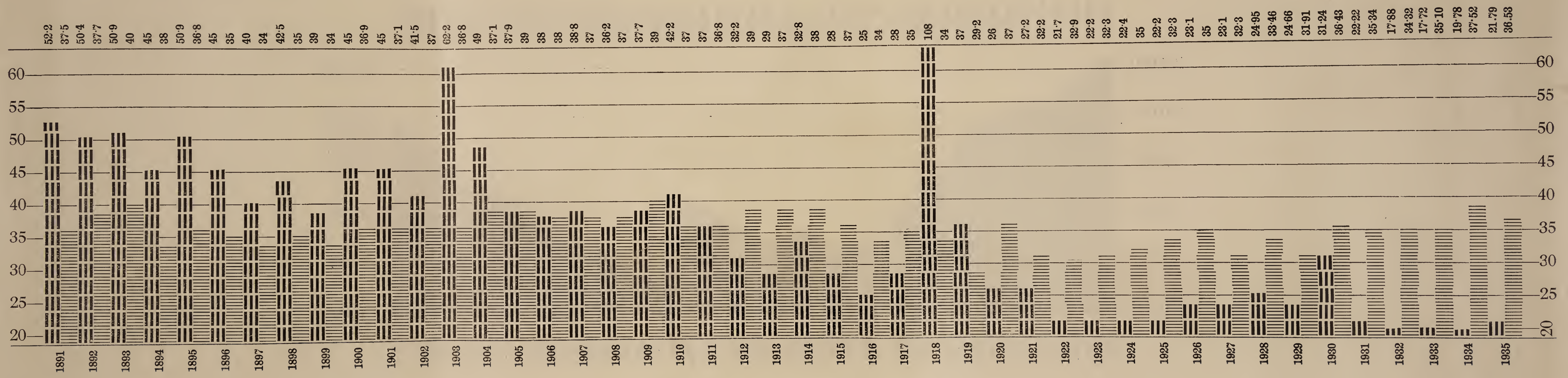
SHOWING THE DECREASE AND INCREASE IN THE FIJIAN RACE FOR THE LAST 45 YEARS.



GRAPH B.

SHOWING THE DEATH AND BIRTH RATE IN THE FIJIAN RACE FOR THE LAST 45 YEARS.

Note.—The thick perpendicular lines indicate the rise and fall in the death-rate; the thin horizontal lines show the rise and fall in the birth-rate.



The provisions relating to infectious diseases are much more comprehensive than those in the old Ordinance, and have been modelled in part on the legislation of New Zealand and other countries. Wide powers are given to the Director of Medical Services and Medical Officers of Health for the purpose of preventing the occurrence and checking the spread of infectious diseases. The control of places of isolation, infected persons, contacts, and infected objects is specially provided for in the Ordinance. It is considered that the powers given under the Ordinance will prove sufficient in practice to control any epidemic.

The total estimated population at the end of December, 1935, was 202,052, including 99,953 Fijians, 85,892 Indians, and 4,938 Europeans. The total death-rate was 15·30 per thousand as compared with 15·47 in 1934. The Fijian death-rate was 21·79, an increase of 2·01 over the previous year. This was chiefly due to the dysentery epidemic which accounted for 76 deaths as compared with 18 deaths from this disease in the previous year. The mortality rate of the Indian population was 8·10, showing a decrease of 2·05 on last year. The birth-rate for the Colony was 36·28 per thousand, a decrease of 0·16 on 1934.

Dysentery was prevalent, more particularly in the first six months of the year on the North coast of Viti Levu, and in the Singatoka Valley during the third quarter; otherwise the health of the Colony on the whole was good. During the first and second quarters 360 and 311 cases respectively, were notified, being chiefly of the Shiga variety. Clinically, the type was much less severe than that experienced in the severe epidemics of 1929 and 1930, the general mortality rate being 8·84 per cent. The notifications of this disease during the year amounted to 917. From specimens submitted to the Bacteriological laboratory from cases in the Suva district, the following results were obtained:—

Shiga	30	Flexner	5
Schmitz	8	Sonne	1
Histolytica	7		

Bacillary dysentery still constitutes a disquieting feature in spite of the fact that the death-rate is much lower than that of 10 per cent. to 11 per cent. which accompanied the larger outbreaks. Until recently this form of dysentery has been regarded as epidemic and perhaps introduced from outside; it must now, I am afraid, be regarded as endemic in Fiji with seasonal prevalence. I believe that the general public and the Natives are beginning to appreciate the importance of sanitation, and the health advantages to be derived from the installation of the new type of bore-hole latrine in connection, especially, with dysentery. The Rockefeller campaign for the installation of these latrines has terminated, and the Medical Department has assumed the sole responsibility for soil sanitation. The bore-hole type of latrine has proved its value in Fiji and in other countries, but the fact must not be lost sight of, that periodical inspection and maintenance are necessary. This is shown in Dr. Lambert's recent review of the hookworm position in the previously most heavily infected areas. His review clearly demonstrates that in these areas re-infection is taking place in an inverse ratio to the installation, inspection, and maintenance, of this type of latrine. He points out that in a heavily infected area where maintenance has been insisted upon, examinations show a 36 per cent. infection, but in other parts where the maintenance has been neglected there is a 48 per cent. infection. Another significant point is that the Fijian population is now more heavily infected than the Indian, which is the reverse of the position in 1920. These facts speak for themselves, and I hope the Department will be in a position financially to continue latrine campaigns (both installation and maintenance) and also to improve the general sanitation of the Native villages.

During the year the following work was carried out by the Soil Sanitation Campaign:—

No. of homes surveyed.	No. of homes re-surveyed.	No. of holes dug.	No. of holes bored.	No. of slabs supplied.	No. completed.
2,386	3,275	1,251	541	2,492	2,002

The mass inoculation of the population against typhoid is being continued, and during the year 11,435 inoculations were given. One hundred and nine cases were reported for the Colony as compared with 196 and 58 in 1933 and 1934 respectively. Of the 109 cases reported for the Colony only 13 cases were reported for the Suva area. All cases bacteriologically proved to be typhosus infection, and no endogenous cases of para-typhoid came to light.

The new transinsular road, and the opening of the Suva–Singatoka section which is expected this year and which will convert the transinsular into a circular road embracing the greater part of Viti Levu should prove a distinct asset to the health of the community by providing a ready access to the higher and cooler parts of the island.

The following returns relative to infectious diseases and sanitation have been prepared by the Medical Officer of Health and are submitted as Appendixes to this report, namely:—

(*a*) Table I—Infectious diseases—notification by districts.
(*b*) Table II—Infectious diseases—notification (cases) by nationalities.
(*c*) Table III—Infectious diseases—notification by monthly incidence.

Suva Rural Sanitary District (*December*, 1935.)

(*d*) Table G.S. I—Number and types of buildings inspected.
(*e*) Table G.S. II—Distribution of population and races.
(*f*) Table G.S. III—Sanitary accommodation.
(*g*) Table G.S. IV—Water supply and bathrooms.

II.—COMMUNICABLE DISEASES.

Enteric Fever.—109 cases were reported for the year. Only 13 of these were domiciled in the Suva area thus speaking for the improved sanitary conditions prevailing in this district.

Influenza.—The Colony was fortunate this year in not being visited by an epidemic of this disease such as occurred in 1934. Only 517 cases with no deaths were reported for the year, as against 2,274 cases in 1934.

Ankylostomiasis.—The Hookworm campaign is being continued by the Medical Department, which took over this valuable work from the Rockefeller Foundation last year. 5,897 people were treated, and the drugs used were carbon tetrachloride and tetrachlorethylene.

Small-pox Vaccinations.—Fresh lymph is received monthly from New Zealand and is distributed to the District Medical Officers and Native Medical Practitioners who, during the tour of their districts, vaccinate all school children and unvaccinated people they can find.

Scabies.—Cases of Scabies are treated whenever found, 1,529 cases receiving treatment during the year. It is pleasing to note that this skin condition is on the decrease, which shows that the Natives are becoming alive to the necessity of personal cleanliness.

Dysentery.—While dysentery is becoming more or less endemic it is gratifying to note that the type is yearly becoming less severe with a lower mortality rate. During the year 917 cases were notified, an increase of 518 over the previous year.

Anti-Malarial Measures.—Fiji is a non-malarial country, and stringent measures are taken by the Port Health authorities to prevent the introduction of the Anopheles mosquito.

Ringworm.—An anti-ringworm campaign is being conducted by the Medical Department, which took over this work from the Rockefeller Foundation some years ago.

Yaws.—The total number of cases reported was 2,612. The Natives are now realizing the benefits to be derived from treatment. 6,253 injections of N.A.B. were given during the year.

Filariasis.—In 1932 a non-blood-sucking mosquito *Megarrhinus splendens* was imported from Java by the Government Entomologist. These mosquitoes were carefully bred through several generations by the Health Department, and distributed by them throughout the Colony. Over 50,000 have been liberated, and they are reported to be feeding voraciously on the larvæ of the *Aedes variegatus*. It is too early yet to say whether or not these preventive measures are of practical value but so far they appear to be decidedly hopeful.

Leprosy.—The problem of leprosy continues to be very thoroughly dealt with in Fiji. On the island of Makongai there is a most up-to-date Leper Hospital, with a staff consisting of a Medical Superintendent, and fourteen European and ten Fijian Roman Catholic Sisters. Cases of leprosy reported in the Colony, irrespective of race, are compulsorily segregated in this hospital, and lepers are also received from New Zealand, Samoa, Niue, Tonga, Cook, and Gilbert Islands. The cost of the institution is borne by the various participating Administrations proportionately to the number of their patients. The cost per head in 1935 was £37 15s. 9d. The hospital proper is divided into two compounds, one of which is reserved for female patients, while in the other are hospital wards for male patients who are acutely sick or unable to look after themselves. There are also five different villages for patients of the various races whom it is unnecessary to detain in hospital. These villages are visited daily by Nursing Sisters. The number of patients at the end of 1935 was 575. Since its establishment in 1911 there have been 1,947 admissions, 343 conditional discharges, 54 re-admissions (many of which have been on account of trophic ulceration rather than for reactivation of the disease) and 13 cases have been re-discharged.

Tuberculosis.—The returns reported for the last six years are as follows:—

Year.	*Cases.*	*Deaths.*
1930	512	60
1931	226	57
1932	286	39
1933	313	61
1934	289	54
1935	238	45

These returns show that this disease is apparently not on the increase. Efforts are being made to gradually educate the people in Fiji to the importance of this disease, and I think they are beginning to appreciate the sources of infection, the mode of its transmission, and how to avoid infection.

Epidemic Dropsy.—Fifteen cases of dropsy occurred in the Suva Gaol. Although the distribution of cases this year showed some concentration in the months of January to April, these gaol cases are notably different in their epidemiological features to former seasonal outbreaks among the Indian population, and usually react readily to dietetic treatment.

Diptheria.—Clinical diptheria is not common. Twenty-four cases of sore throat, usually mild in degree, were reported, with the presence of the Klebs-Leeffler bacillus in more or less pure culture. Streptococcic (hæmolytica) sore throats have been rather common.

III.—VITAL STATISTICS.

The graphs A and B, introduced in the Annual Report, 1932 have been extended for 1935, and show that the steady improvement in the birth and death-rate of the Fijian race has been maintained.

The estimated population at the end of 1934 and 1935 was:—

Race.	Males, 1935.	Females, 1935.	Total, 1935.	Total, 1934.	Increase.	Increase per cent.	Decrease.	Decrease per cent.
Europeans	2,548	2,390	4,938	4,763	175	3·67	..	..
Half-castes	1,987	1,859	3,846	3,717	129	3·47	..	..
Fijians..	51,184	48,769	99,953	98,479	1,474	1·49	..	..
Rotumans (all races)	1,290	1,271	2,561	2,498	63	2.52	..	..
East Indians	50,011	35,881	85,892	83,289	2,603	3·12	..	..
Polynesians	1,321	661	1,982	1,866	116	6·22	..	..
Chinese	1,335	151	1,486	1,486	..	..	..	..
Others	892	502	1,394	1,351	43	3·18	..	..
Total ..	110,568	91,484	202,052	197,449	4,603	2·33	..	..

The number of births recorded during the last four years was:—

Race.	1932.	1933.	1934.	1935.	Crude birth-rate per 1,000, 1935.
Europeans	78	77	42	62	12·56
Half-castes	137	146	90	162	42·12
Fijians	3,260	3,393	3,696	3,652	36·53
Rotumans	97	127	92	132	51·54
East Indians	3,036	3,132	3,098	3,210	37·37
Polynesians	33	40	39	54	27·25
Chinese	17	22	20	23	15·49
Others	54	29	119	35	25·11
Total ..	6,712	6,966	7,196	7,330	36·28

The general birth-rate in 1934 was 36.44

The number of deaths recorded during the past four years was:—

Race.	1932.	1933.	1934.	1935.	Crude death-rate per 1,000, 1935.
Europeans	33	42	33	34	6·89
Half-castes	35	33	34	33	8·53
Fijians	1,698	1,713	1,948	2,178	21·79
Rotumans	47	63	115	69	26·94
East Indians	663	921	845	716	8·10
Polynesians	33	56	51	44	22·20
Chinese	7	10	4	10	6·73
Others	26	9	24	7	5·74
Total ..	2,542	2,847	3,054	3,091	15·30

The general death-rate for 1934 was 15·47.

The marriages, births, deaths and natural increase for 1935 were:—

Race.	Marriages.	Births.	Deaths.	Increase.	Decrease.
Europeans	32	62	34	28	..
Half-castes	37	162	33	129	..
Fijians..	838	3,652	2,178	1,474	..
Rotumans	28	132	69	63	..
East Indians	921	3,210	716	2,494	..
Polynesians	8	54	44	10	..
Chinese	..	23	10	13	..
Others	8	35	7	28	..
Total ..	1,872	7,330	3,091	4,239	..

The rates of natural increase were:—Europeans, 5·88 per thousand; Half-castes, 34·71; Fijians, 14·97; Indians, 29·94; Chinese, 8·75. The natural increase of all races was 21·47 per thousand.

INFANTILE MORTALITY, 1935.

Race.	No. of deaths under 1 year.	Rate per 1,000 births.	No. of deaths 1–5 years.
Europeans ..	2	32·26	4
Half-castes ..	8	49·38	4
Fijians	462	126·51	358
East Indians ..	203	63·24	58
Polynesians ..	8	148·15	4
Others	5	142·86	2
Rotumans ..	9	68·18	6
Total ..	697	95·09	436

The number of Native births for 1935 was 3,652, against 3,696 in 1934, a decrease of 44. The Indian births in 1935 were 3,210, against 3,098 in 1934, an increase of 112. The birth-rate per 1,000 of the whole population decreased from 36·44 in 1934 to 36·28 in 1935.

The total number of deaths registered in 1935 was 3,091, an increase of 37 on the previous year's figures. The death-rate per 1,000 of the Fijian population increased from 19·78 in 1934 to 21·79 in 1935, whereas the Indian death-rate declined from 10·15 to 8·10.

The Fijian infant mortality per 1,000 births increased from 126·35 in 1934 to 126·51 in 1935, and the Indian rate decreased from 82·95 to 63·24.

HEALTH STATISTICS OF EUROPEAN AND NATIVE OFFICIALS.

	Europeans.	*Natives.*
Total number of officials resident	350	430
Average number resident	303	351
Total number on sick list	129	212
Total number of days on sick list	1,542	1,868
Average daily number on sick list	2·7	2·0
Percentage of sick to average number resident	36·8	49·3
Average number of days on sick list for each patient . ..	11·9	8·8
Average sick time for each resident	4·4	4·3
Total number invalided out of the Colony	3	*
Percentage of invalidings to total residents	1·16	1·43
Total deaths	1	6
Percentage of deaths to total residents	·285	1·49
Percentage of deaths to total average number of residents ..	·329	·70

* Three pensioned, medically unfit.

Health of Officials.—Free medical attention is not given to all officials and the majority of officers receive attention from private practitioners. The foregoing statistics are therefore approximate.

III.—HYGIENE AND SANITATION.

It is felt that insufficient attention has been given to the various items of inspection, &c., included in this section, but with the present depleted staff it is not possible to give adequate time to this work. Meat inspection, inspection of foodshops, &c., and dairies is a whole-time job for one qualified inspector, and until this can be arranged the work is necessarily spasmodic and incomplete.

GENERAL SANITATION.

Sanitary Inspection in Suva Rural District.——Systematic house-to-house inspection and re-inspection has been continued during the year, the following visits having been made:—

Area.	*Inspections.*	*Re-inspections.*	*Total.*
A	402	107	509
B	165	90	255
C	305	257	562
D	388	423	811
E	273	110	383
F	937	516	1,453
G	212	124	336
H	169	90	259
	2,851	1,717	4,568

Sections A to F were inspected twice during the year and sections G and H once only. The total number of inspections made in the Suva Rural District is 1,379 less than during 1934. This is accounted for by the fact that during the whole of January the inspecting staff were engaged in the Rewa District, and that Mr. Martin, who carried out the majority of these inspections, was engaged as relieving clerk and steward at the Colonial War Memorial Hospital for an additional period of two months.

Sanitary Improvements.—The response to notices given by the inspecting staff has on the whole been good, and co-operation has improved, particularly in the outlying areas which are more difficult of access. The following list of sanitary improvements completed cannot be considered a complete result of the inspections made, as many other improvements have come about as the result of advice given although, as the work done was entirely voluntary, records are not available.

Summary of Sanitary Improvements completed during the year.

New privies constructed	106
Privies repaired	415
Insanitary privies filled in	94
Insanitary urinals abolished	2
Light and ventilation to W.Cs. improved	16
Wells protected or covered	37
New wells dug	1
Insanitary wells filled in	5
Wells repaired	64
Insanitary tank removed	1
New water tanks installed	3
Covers for drums provided	24
Pipe water supply laid on	60
Bathrooms paved or drained	15
New bathrooms or kitchens built	1
Bathrooms repaired	20
Drains dug	46
Drains repaired or cleansed	311
Drains screened	6
Insanitary buildings demolished	11
Accumulations of rubbish removed	145
Bush, &c., cut	144
Keeping of animals discontinued	5
Nuisance from dead animals abated	5
Additional ventilation provided	1
Repairing and regrading of yards	2
Guttering and down-pipes repaired	3
Premises rat-proofed	1
General repairs to buildings	6
	1,550

Written Notices and Legal Proceedings.—583 written notices were issued during the year. In 10 instances it was necessary to take legal proceedings for offences as follows:—

Failure to protect well from contamination	1
Failure to maintain latrines in good order	7
Failure to keep drains clean	1
Failure to remove offensive matter under dwelling	1

Convictions were obtained in each case and small fines inflicted. The object in taking these cases to Court was not to secure heavy penalties but to obtain compliance with sanitary law, and in this respect they served a very useful purpose.

Closing Orders.—Six closing orders were issued in respect of insanitary dwellings. Of these six buildings five have been demolished, and the remaining building will be demolished as soon as a new building (now in the course of erection) is completed. A total of 53 insanitary dwellings were demolished during the year.

Supply of Cement Latrine Slabs.—The supply of latrine slabs and lids through the Health Office has been continued, and during the year 89 slabs (68 flat type and 21 pedestals) were supplied for installation, as well as a large number of new plug lids for use in slabs already installed.

New Dwelling-houses.—During the year applications were received in respect of 207 proposed new dwellings. Visits were made to sites before erection, and during the course of erection to advise as to the requirements of dwelling-house by-laws. One hundred and thirteen certificates were issued in respect of dwellings erected to fully comply with the by-laws. 1,268 visits were made in connection with the erection of new buildings. Forty-one new dwellings were erected to replace insanitary buildings demolished.

Laundries.—Laundries are registered every six months and before a licence is issued, the requirements of the Health Department must be fulfilled. In addition, all laundries are inspected once a fortnight. Night inspections are also made. The Health Department are quite satisfied with the standard of sanitation maintained.

Anti-mosquito work and general clearing.—A gang of six men has been regularly employed clearing unoccupied Crown lands in the Suva area. In addition, many public drains and small watercourses have been kept cleared, and large numbers of empty tins, bottles, &c., buried or disposed of so as to prevent mosquito breeding. 367 latrines or accumulations of water have been oiled to prevent mosquito breeding. One man has been continuously employed at Suva Point clearing refuse and jetsam from the beach and culverts, and generally carrying out work to prevent the occurrence of nuisances at this place.

Rewa Rural Sanitary District.—Weekly visits have been made to Rewa by an Inspector of the Central Board of Health almost continuously throughout the year, and general supervision given to the erection of new buildings and the inspection work carried out by a European and Indian Sanitary Inspectors. In January a house-to-house survey was made of Nausori Township, each building having a metal reference number fixed, and a corresponding record card made out. During the course of the survey the following information was obtained:—

Premises Inspected and Recorded.

Private dwellings	80
Business premises and tenements	103
Total	183

Population of Premises Inspected.

Europeans and half-castes	93
Indians	531
Fijians	47
Chinese	44
Japanese	2
Total	717

Sanitary Accommodation of Premises Inspected.

Served by cement slab latrines	102
Served by cement pedestal latrines	54
Served by septic tanks	13
Served by box seat latrines	14
Total	183

Water Supply of Premises Inspected.

Obtained from wells	8
Obtained from tanks or drums	172
Obtained from river	3
Total	183

As a result of the survey 120 written notices were issued and followed up. It was necessary to prosecute in 10 instances to obtain compliance with the notices served. Since the survey was made monthly inspections of all premises have been arranged with the following up of sanitary defects discovered. General sanitary inspection was carried out in the rural area at Rewa in co-operation with the latrine campaign.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Girls' Grammar School.—The standard of health maintained throughout the year was good. The school buildings are reported to be in a dilapidated condition and the accommodation was cramped. These buildings were condemned by the Director of Medical Services and the Medical Officer of Health five years ago.

Boys' Grammar School.—The standard of health maintained during the year was good, but boils were apparently fairly prevalent, and the Medical Officer recommends the installation of a hot-water system for bathing, which should diminish the incidence of skin conditions. There were no epidemics during the year.

Queen Victoria School.—The School Medical Officer is of the opinion that due to the improved diet scale, the general health of the pupils has greatly benefitted. Six cases of dysentery were admitted from the school to the Colonial War Memorial Hospital. On investigation it was found that the source of infection was derived from outside the School.

TOWN-PLANNING AND BUILDING REGULATIONS.

The business part of the town of Suva is changing from a collection of temporary premises erected without much attention to future requirements to permanent buildings in concrete. These new buildings are rapidly springing up at the more important strategic sites, and call for careful town-planning and adequate building regulations if expensive mistakes are to be avoided. The laying down of improved and wider roads has done much to improve the appearance of parts of the business area, and the widening of Thomson Street Bridge now facilitates traffic between the port and town. The European settlements at Vatawanga and Lami are proving popular, and their boundaries are extending.

IV.—PORT HEALTH WORK AND ADMINISTRATION.

Inspections.—Inspections for the year included:—Incoming vessels boarded, 149; inspections of shipping for mosquitoes, 22; and inspections of shipping (general), 98.

Disinfection.—392 articles of imported second-hand clothing were passed through the steam disinfector at Pioneer Wharf, and disinfection of vessels has been carried out when required.

Cleansing Work.—The foreshore near Suva has been regularly inspected, and cleared of accumulations of rubbish and jetsam weekly.

Inspection and Fumigation of Shipping and Anti-rat Measures.—Vessels arriving from plague infected or suspected ports, vessels likely to be harbouring adult Anopheles mosquitoes, overseas vessels not holding deratisation or deratisation exemption certificates issued within six months, vessels about to go on slip, or be docked for repairs, and local ships when up for six-monthly survey, are fumigated by the Port Sanitary Staff.

Table PI.—Vessels Fumigated during 1935.

Description of vessel.	Method of fumigation.				Rats obtained.	
	Clayton Gas.	Clayton Gas and Cyanide.	Cyanide.	Total.	Total.	Average per vessel.
Overseas	..	1	8	9	..	..
Local	..	..	78	78	126	1·6
Total ..	..	1	86	87	126	1·4

" International " deratisation certificates issued—11.

The average number of rats per local vessel found after fumigation is slightly higher than for 1934—1·6 as compared with 0·4—but this is attributed not to greater rat infestation but to more thorough searching. The number of rats per vessel appears to have been reduced to the minimum which can be expected. In 1929, when regular six-monthly fumigation was commenced, the figure was 50 per vessel. The figure of 1·6 for 1935 again goes to support the efficiency of local fumigation methods. During 1935 the use of cyanide " Units " was tried out with a view to this method replacing the pot dumping method in use. The " Units " were found to be equally efficient and a great saving in the time required for fumigation was effected, which more than compensates for the slightly increased cost. Twenty-one vessels were fumigated with " Units," and if more substantial containers can be provided by the makers it is probable that " Units " will entirely replace the use of pots. An Indian rat-catcher is employed in the Port and Municipal areas of Suva, and has set traps and caught rats as set out in the following tables:—

Table PII.—Traps set and rats caught in Port and Municipal areas.

Spring traps.		Cage traps.		Sticky traps.	
Traps set.	Rats caught.	Traps set.	Rats caught.	Traps set.	Rats caught.
5,413	1,227	2,582	507	452	151

Total traps set	8,447
Total rats caught	1,885
Rats sent to laboratory for examination (all found negative for B. pestis)	462
Poison baits laid.	Nil.

It should be noted that in some instances traps set in dry weather may become non-effective by reason of heavy rains soon afterwards, thus tending to lower the number of rats caught for traps set.

Table PIII.—Species of Rats Caught.

Where obtained.	Species and numbers.		
	Black (*Rattus rattus*).	Brown (*Rattus norvegicus*).	Total.
Overseas shipping	..	..	..
Local shipping	126	..	126
Wharves, warehouses and residences	249	1,636	1,885
Total ..	375	1,636	2,011

Sanitation of local shipping.—When up for fumigation local vessels are inspected for sanitary defects and where discovered these have been remedied.

V.—NATIVE CHILD WELFARE.

Child Welfare Work has been successfully continued throughout the year, and the success attending the efforts of the nurses and their staff is very gratifying. There are five European Infant Welfare Nurses stationed in the provinces of Tailevu, Nandronga, Mathuata, Mba, and Rotuma respectively. In addition there are 14 trained Native Child Welfare Nurses stationed in various parts of the Group. Native Women's Committees and other voluntary workers also render valuable assistance in this important branch of the work. The control of this work is in the hands of the Secretary of Native Affairs who is chairman of a Central Executive Committee consisting of the Director of Medical Services, and the District Commissioner, Rewa. District Committees under the chairmanship of the District Commissioner have been formed in each district. There are also Native Women's Committees in most of the Fijian villages. These Committees do very good work, and are generally thoroughly interested in the enterprise.

VI.—HOSPITALS AND DISPENSARIES.

The Colonial War Memorial Hospital, Suva.—In August the Hon. E. G. Theodore and his associates in the mining industry of the Colony placed at the disposal of the Government the sum of £5,000 for purposes connected with the Hospital. While there are several major works that are urgent, such as new nurses' quarters, improved laundry facilities, a maternity ward, &c., it was decided in the interests of the children of the Colony that a Children's Ward should be erected with this sum of money so generously given by the Hon. E. G. Theodore and his partners. This new department of the Institution will fill a long felt want as, at present, there is no special accommodation for children. It has been found most unsatisfactory to have children and adults together in one ward, both from moral, æsthetic and disciplinary reasons, and it is obvious that the Hospital routine for a child is entirely different to that for an adult, and that their concentration in a ward of their own will entail improvement in nursing and a marked increase in their happiness. On behalf of the medical staff I wish to express our appreciation to the Hon. E. G. Theodore and his colleagues for their handsome gift, which will be such an asset both to the public and the Medical Department. During the year, work was commenced on the new Pathological and Bacteriological Department. Funds to assist in the erection of this important unit were generously donated by the Rockefeller Foundation due to the representations of Dr. S. M. Lambert, the local Director of the Foundation. These laboratories will be under the direction of Dr. D. C. M. Macpherson, and will include a modern post-mortem theatre. These laboratories will fill a long felt want for the training of the students of the Central Medical School in the fundamentals of disease, with special references to parasitology and public health. Accommodation has also been made for research work in which it is felt there is an enormous field in the Pacific.

The nursing staff consists of the Matron, Assistant Matron, four graduate staff nurses, and one Native Obstetric Staff Nurse. There are 13 European probationers and 20 Native probationers. Our nursing school has been accepted by the New Zealand Registration Board, and by reciprocity our graduates are entitled to practise the profession of nursing throughout the Empire. The Native girls, however, only obtain a local qualification. There is no doubt that our main hospital is under-staffed, and in consequence the nurses are over-worked. Unfortunately, until the urgent need of new nurses' quarters has been rectified, we will be unable to alleviate this state of affairs, as, owing to the insufficient accommodation, our present nursing staff have to share bedrooms, and live under conditions which are most undesirable in the tropics. A special Committee is considering the whole question of Hospital buildings and accommodation, &c.

The work of this hospital seems every year to get heavier,every bed (especially European) being occupied, and there is also always a long waiting list. Including all classes of patients there is actual accommodation for 170. There were 2,713 in-patients treated during the year as against 2,398 last year, and 14,561 out-patients. The surgical procedures totalled 3,202.

The Central Medical School.—The usual final examinations were held in December, 1935. Twelve students sat for the examination, and eight passed and were granted certificates as qualified Native Medical Practitioners. The students are divided into two groups—junior and senior. The junior course covers one and a half years, and the senior course two and a half years. During the first half year the juniors receive instruction in Chemistry, Physics and Biology, and the remaining twelve months, instruction in Anatomy and Physiology. The senior students are on duty in the hospital from 8 a.m. to 1 p.m., and they receive lectures in the afternoon on Medicine, Surgery, Obstetrics, Public Health, Materia Medica, Anæsthetics, Diseases of the eye, Diseases of Children, Dentistry and Bacteriology. The Natives of the Pacific are enthusiastic sportsmen, and the Central Medical School Rugby team were the winners for 1935 of the Costello Challenge Shield—winning 10 out of 12 games, and finishing with a lead of four points over the second team (Police). The school year is divided into four quarters. The students are given two weeks' holiday at Christmas and again at the end of June. In December it was necessary to make arrangements for the return of seven newly-qualified Native Medical Practitioners to their distant homes in various parts of the South Seas, and also to make arrangements for the reception of nine new students from similarly distant islands. All these arrangements were satisfactorily completed, and it is interesting to note that such a large interchange of distant students will not occur again until December 1938. The following table shows the number and race of the students in each year of training in 1935:—

	1st year.	*2nd year.*	*3rd year.*	*4th year.*	*Post-graduate.*	*Total.*
Western Samoa	3	.	.	1	.	4
Eastern Samoa	1	.	.	.	.	1
Tonga	1	.	1	2	.	4
Gilbert and Ellice Islands	1	.	1	2	1	5
Solomon Islands	1	1	1	1	.	4
New Hebrides	.	1	.	.	.	1
Nauru	1	.	.	.	.	1
Cook Islands	2	.	.	1	.	3
Fiji—Fijians	4	.	5	5	1	15
Rotumans	.	.	2	.	.	2
Indians	1	.	1	.	.	2
	15	2	11	12	2	42

Lautoka Hospital, the second largest hospital in the Colony, is under the control of one of the Senior District Medical Officers of the Colony, who is a keen surgeon of great experience, having been many years Medical Superintendent of the Colonial War Memorial Hospital, Suva. The Institution practically caters for the medical and surgical needs of the whole of North-West Viti Levu, and, owing to the rapid development of this area from the activities of the mining industry, the work of this unit has increased enormously. The nursing staff has been augmented by another European Sister, and the Native nursing staff has also been increased. The new maternity ward has filled a long felt want, and is nearly always full. In all, 2,335 in-patients were treated during the year, and 7,298 out-patients. This hospital was responsible for £1,160 in revenue. There were 97 deaths in the hospital, a fairly low mortality rate in comparison with the number of in-patients. 1,282 major operations were performed during the year, and 282 neo-arsphenamin injections were given.

Lambasa Hospital is the main Government hospital in the province of Mathuata. It is a general hospital of a thirty-bed capacity with European and Native sections under the charge of a District Medical Officer, and the nursing care of a European Sister assisted by Native nurses. 647 in-patients and 6,122 out-patients were treated during the year. 110 major operations were performed, 1,261 anti-typhoid injections and 564 of N.A.B. were given. There were 25 deaths in the hospital during the year.

The Ndreketi Dispensary is in charge of a Native Medical Practitioner assisted by a Native nurse. 795 patients received treatment, and 132 injections of N.A.B. were given. 72 minor operations were performed and 4 under a general anæsthetic.

Visongo Dispensary has been for many years under one of the most efficient and hard-working Native Medical Practitioners. 1,453 patients received treatment, 174 arsenical injections were given, and 41 minor operations were performed.

Levuka Hospital.—This hospital—one of the oldest general hospitals in the Colony—is in charge of the District Medical Officer at Levuka. The staff consists of a European Sister, a Native Medical Practitioner, and two Native nurses. The hospital has accommodation for all races. The European section of the building is composed of two wards together with the Sister's quarters and kitchen. The Natives are accommodated in three wards which are separated from the European block by a covered way. In all, there are 19 beds, and there is in addition an isolation block which can accommodate eight patients. 287 in-patients received treatment during the year, and 2,657 out-patients. There were ten deaths in the hospital. The number of operations performed under a general anæsthetic was 31, and there were 203 minor operations. 450 injections of N.A.B. were given.

Penang Hospital.—There were 223 in-patients admitted during the year, and 2,033 out-patients received treatment. Five operations were performed under a general anæsthetic, and 82 minor operations. Eighteen injections of N.A.B. were given. There were 65 cases of dysentery admitted, with two deaths. The dysentery epidemic which occurred last year in this district started in January and lasted until June. It is expected that epidemics will become less frequent with improved sanitation, but there will always be a considerable number of carriers who are a potential source of danger. A threatened epidemic of typhoid fever occurred in the labour lines at the sugar mill and at Ndrauniivi, but owing to the early preventive measures adopted by the District Medical Officer only six cases occurred in all. The District Medical Officer is to be congratulated on preventing the spread of this disease.

Nanukuloa Provincial Hospital.—At this hospital 298 in-patients were treated during the year, and 2,045 out-patients. Sixty-nine minor operations were performed, and 11 operations under a general anæsthetic. 129 intravenous injections of N.A.B. were given, and there were 30 deaths during the year, of which 18 were due to dysentery. There were 95 cases of dysentery admitted to hospital during the Ra epidemic of whom 18 died. Sixteen of the deaths were under five years of age, and all were Fijians.

Ndrauniivi Dispensary.—This dispensary is situated on the roadside near Ndrauniivi town, about 18 miles from Penang. It is visited twice a week by the travelling Native Medical Practitioner. 478 patients received treatment and 47 injections of N.A.B. were given. 700 anti-typhoid injections were given and 80 minor operations were performed.

Namarai Dispensary.—This dispensary is under the care of a Native Medical Practitioner, and is situated at Namarai Village in the district of Nakorotumbu, about 2½ hours by launch from Nanukuloa. 673 patients received treatment. 106 injections of N.A.B., and 135 anti-typhoid injections were given.

Taveuni Provincial and Cottage Hospitals.—There is one medical centre in this district at Waiyevo. At this centre is the large Provincial Hospital for Natives, and the Cottage Hospital for Europeans. The District Medical Officer is in charge with the European Sister at the Cottage Hospital, and a Native Medical Practitioner at the Provincial Hospital. The Native nurse and travelling Native Medical Practitioner, when not travelling, are stationed at the Provincial Hospital. The Sister is also Matron of the Provincial Hospital, and is Child Welfare Nurse. The Provincial Hospital was entirely rebuilt in 1930–31, and is now a large airy building having three general wards, maternity and isolation wards. The normal accommodation for general patients is 24 beds. 398 in-patients received treatment, and 1,677 out-patients. Twenty-seven major operations and 120 minor were performed during the year. 280 injections of N.A.B. were given. There were 10 deaths in the hospital during the year. The Provincial Hospital takes the place of all former plantation hospitals and dispensaries. The admissions are normally more than 50 per cent. plantation labour. Sister Ifwerson resigned in October after five years of valuable service, and Sister Forster replaced her as Sister-in-Charge of the Cottage Hospital and Matron of the Provincial Hospital. There were 17 admissions to the Cottage Hospital with no deaths.

Hospitals in the Mba District.—The hospitalisation of this district is, in my opinion, excessive and should be centralised into one general hospital. There are four hospitals all within five miles.

Nailanga Hospital is the main Government Hospital in this district. 293 in-patients were treated and 1,487 out-patients. 130 minor operations were performed, and there were four operations under a general anæsthetic. 142 injections of N.A.B. were given during the year. There were 38 deaths in the hospital. This is a high mortality rate in comparison with the number of in-patients, and is attributed by the District Medical Officer to the severity of the type of dysentery which occurred during the year at the new mining areas.

Rarawai Hospital.—This hospital is one of the old type plantation hospitals, and is run by the Colonial Sugar Refining Company. There were 347 in-patients treated, and 7,238 out-patients. Twenty-one operations were performed under a general anæsthetic and 201 minor operations. Fourteen deaths occurred during the year and 87 injections of N.A.B. were given.

Mba Cottage Hospital, which is partly subsidised by the Government, has been fully patronised during the year. There were 52 in-patients treated, and 292 out-patients, with two deaths.

The Methodist Mission Hospital is also subsidised by the Government to the extent of £400 per annum. This hospital is purely an Indian Women and Children's Hospital. The Obstetrical Ward—the only one on the Mba side of Viti Levu—is a great asset to the district. The staff consists of a Resident Lady Doctor, and three European Sisters. The total number of in-patients was 446, and 4,502 out-patients.

The Savu Savu Provincial Hospital and *Cottage Hospital* is situated at Nambauto. It consists of three wards—two Native, and one used as a Cottage Hospital by the Europeans. It has nine beds, a dispensary and operating theatre. 178 in-patients were treated during the year, and 2,302 out-patients. Thirty-nine operations were performed under a general anæsthetic, and 214 injections of N.A.B. were given.

Mbua Provincial Hospital is situated at Nambouwalu, and is in charge of a Native Medical Practitioner. The number of in-patients treated was 178, and 2,019 out-patients. There were seven deaths in the hospital. Twenty-five minor operations were performed, and 294 injections of N.A.B. were given.

Nandronga Provincial Hospital is situated at Koromumu, and serves the Provinces of Nandronga and Tholo West. The District Medical Officer's quarters, and the Native Medical Practitioner's, are situated in the hospital compound. This hospital has 21 beds, and consists of three wards and an operating theatre. 269 in-patients received treatment with a mortality rate of 9·3 per cent. There were 1,807 out-patients treated. Thirty-five operations were performed under a general anæsthetic, and some under intravenous evipan. It is the considered opinion of the majority of the District Medical Officers that this anæsthetic has found a new place in anæsthesia.

Rotuma Hospital.—This hospital is situated on an island which is a dependency of the Colony, and has a staff of one Native Medical Practitioner and two Native nurses. 143 in-patients were treated during the year, and 1,927 out-patients. This hospital, situated on a small island several hundred miles from Suva, is entirely under the control of a graduate of the Central Medical School. It is gratifying to note that five major operations were performed (including a gangrenous appendix) under a general anæsthetic, without any deaths.

Nandi Hospital.—The number attending the out-patients department of this unit is still increasing, being 11,060, as against 9,072 last year. The total number of admissions was 291. 560 injections of N.A.B. were given for yaws.

Wainimbokasi Hospital is one of the oldest provincial hospitals in the Colony, and is situated on the banks of the Wainimbokasi River. It serves the provinces of Rewa, Tailevu and Naitasiri. It is under the charge of the Senior District Medical Officer in the Colony, who is stationed at Rewa. There is a resident senior Native Medical Practitioner. 398 patients were admitted for treatment during the year, and 2,356 out-patients were seen and treated. 352 injections of N.A.B. were given during the year. All cases were treated intravenously.

Indian Free Dispensary at Nausori.—This dispensary is situated below the Colonial Sugar Refining Company's plantation hospital, and serves mostly the employees of the Sugar Company. The number of attendances during the year was 402. The Colonial Sugar Refining Company's Hospital Superintendent acts as dispenser, and, in the unavoidable absence of the District Medical Officer, sees to any emergency cases.

The Nausori Plantation Hospital is under the control of the Colonial Sugar Refining Company, and is no longer used for the treatment of in-patients. At the out-patients department 3,906 received treatment.

The Native Medical Practitioners throughout the Colony treated 37,358 cases with 257 deaths. The following tables show the number of admissions and deaths at the hospitals of the Colony:—

COLONIAL WAR MEMORIAL HOSPITAL.

Year.	*Admissions.*	*Deaths.*	*Death-rate.*
1932	2,345	145	6·18
1933	2,509	161	6·41
1934	2,398	144	6·00
1935	2,713	162	6·00

LAUTOKA HOSPITAL.

Year.	*Admissions.*	*Deaths.*	*Death-rate.*
1932	1,615	59	3·65
1933	1,860	81	4·3
1934	1,862	88	4·73
1935	2,335	97	4·11

LEVUKA HOSPITAL.

Year.	*Admissions.*	*Deaths.*	*Death-rate.*
1932	241	12	4·98
1933	249	11	4·6
1934	269	10	3·72
1935	287	10	3·48

LAMBASA HOSPITAL.

Year.	*Admissions.*	*Deaths.*	*Death-rate.*
1932	406	21	5·17
1933	501	29	5·78
1934	522	29	5·55
1935	647	25	3·86

PROVINCIAL HOSPITALS

Year.	*Admissions.*	*Deaths.*	*Death-rate.*
1932	3,377	63	1·86
1933	2,885	155	5·37
1934	2,398	135	5·63
1935	2,597	158	6.08

NATIVE MEDICAL PRACTITIONERS.

Year.	*Cases treated.*	*Deaths.*
1932	36,800	178
1933	36,975	183
1934	37,416	261
1935	37,358	257

VII.—PRISONS AND ASYLUMS.

The sanitary conditions of the gaols throughout the Colony were maintained at the usual high standard, and reflect credit on all concerned. No doubt to this must be largely attributed the satisfactory condition of the health of the prisoners.

A modern bakery at the Suva Gaol is run by the inmates, and supplies bread of a very good quality to the prison and staff, the Public Lunatic Asylum, the Colonial War Memorial Hospital, and the Grammar Schools.

Suva Gaol.—Routine visits of inspection by the Visiting Medical Officer were made three times weekly throughout the year, when all new prisoners were examined and cases requiring medical attention seen. During the year, 93 patients were admitted to the Gaol Infirmary, while 312 were treated for minor conditions as out-patients. Twenty cases of epidemic dropsy occurred. These cases cleared up readily under treatment in the Infirmary.

The Public Lunatic Asylum is under the care of a Medical Superintendent who is also Assistant Medical Superintendent at the Colonial War Memorial Hospital. The resident staff consists of two European male attendants, a female European attendant, and 15 Native attendants. The total number of patients treated during the year was 113, of which 71 were patients remaining over from the previous year, while 42 were new admissions. During the year 19 patients were discharged unconditionally, and two were allowed out on trial. There were six deaths, and 86 patients remained at the end of 1935. The general health of the patients was good, there being a very satisfactory freedom from bacterial or preventable disease. One fatal case of Bacillary dysentery and one suspected case occurred. The gardens of the institution have yielded good supplies of fruit and vegetables. Through the kindness of the Director of Agriculture quantitites of fresh fruit have been made available, and these have been greatly appreciated by the patients.

VIII.—METEOROLOGICAL.

The total rainfall at Suva for 1935 was 163·62 inches, compared with an average of 119·51 inches over a period of 51 years. The wettest month was November, when 26·55 inches fell, and the driest June, when 4·67 inches was recorded. There were 281 wet days, the wettest being November 24th, when 7·53 inches fell. The year 1935 is the fourth wettest year on record.

IX.—SCIENTIFIC.

Papers by Sir James Purves-Stewart and Professor David Waterston on " Observations on Fijian Fire-Walking," Dr. S. M. Lambert (Director of the Rockefeller Foundation) on "A Re-survey of Hookworm Disease in Fiji in 1935, ten years after Mass Treatment," and Dr. C. J. Austin on "A Study of Leprosy in Fiji " are attached to this report.

Some interesting graphs are also shown giving a picture of the Vital Statistics of the Natives in the principal sugar-producing Colonies of the Empire. They are as follows:—

Birth-rate in Principal Sugar-producing Colonies of the Empire.
Death-rate in Principal Sugar-producing Colonies of the Empire.
Birth-rate of Fijians and Indians in Fiji and of Indians in British Guiana and Mauritius.
Death-rate of Fijians and Indians in Fiji and of Indians in British Guiana and Mauritius.
Percentage increase of population in Principal Sugar-producing Colonies of the Empire.

X.—GENERAL.

DRUGS AND POISONS ORDINANCE (DANGEROUS DRUGS).

Permits were granted during 1935 to remove from the Opium Store the following quantities of dangerous drugs:—Tr. Opium Conc. (1–7), 10 pints, (1-9) 5 pints, (1–7 6 pints 12 ounces, 1–9 5 pints); Pulv. Ipecac. Co. 14 ℔ (14 ℔); Cocaine Hydrochloride Nil (1 ℔); Ung. Gallæ. c Opio 1 ℔ (20 ℔); Codeine Phosphate 2½ ounces (4 ounces). The figures in brackets refer to 1934.

A. H. B. PEARCE,
Director of Medical Services.

APPENDIX A.

COLONIAL WAR MEMORIAL HOSPITAL.

RETURN SHOWING THE EXPENDITURE AND REVENUE IN EACH OF THE LAST TEN YEARS AND THE COST PER BED OCCUPIED.

Year.	In-patients.	Daily average in hospital.	Expenditure	Cost per head per day. Personal Emoluments	Cost per head per day. Other Charges.	Cost per head per day. Total.	Patients fees received.	Fees, if paid, of patients treated gratuitously
			£ s. d.	d.	d.	d.	£ s. d.	£ s. d.
1926	1,767	76·20	9,605 19 4	38·2	44·6	82·8	1,265 18 5	2,832 1 0
1927	2,180	81·51	10,192 14 2	38·2	44·0	82·2	1,452 7 7	3,389 0 0
1928	2,141	72·60	11,061 19 0	45·6	54·5	100·1	1,461 11 2	3,580 3 6
1929	2,464	80·3	11,029 0 0	42·3	48·0	90·3	1,534 11 5	3,097 15 0
1930	2,805	87·51	10,976 18 2	39·2	43·4	82·6	1,377 0 9	4,551 4 0
1931	2,303	87·04	10,690 19 1	43·8	36·9	80·5	1,628 6 5	3,278 0 0
1932	2,345	95·2	11,085 5 5	40·5	35·2	75·7	2,098 3 7	6,662 5 0
1933	2,509	104·83	11,382 19 6	38·4	33·1	71·5	2,067 5 3	5,497 18 10
1934	2.398	106·45	11,762 7 0	37·7	34·9	72·6	1,999 17 7	5,428 18 2
1935	2,713	118·07	12,237 16 10	31·92	36·22	68·14	2,245 4 4	5,421 1 0

Remarks.—Salaries of the Medical Officers are included. The expenditure on the Central Medical School is not included. The cost of drugs used for out-patients is included. The expenditure under Works Department votes is not included.

LAUTOKA HOSPITAL.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FIVE YEARS AND THE COST PER BED OCCUPIED.

Year.	Average daily number in hospital.	Expenditure.	Cost per head per day.		Total.
			Personal Emoluments	Other Charges.	
		£ s. d.	d.	d.	d.
1931	38·5	2,738 8 4	16·7	30·1	46·8
1932	44·0	3,026 8 3	14·3	30·7	45·0
1933	48·0	3,245 8 8	14·2	30·2	44·4
1934	49·0	3,366 14 1	13·2	32·0	45·2
1935	49·83	3,419 17 0	15·95	29·18	45·13

Remarks.—Does not include salaries of Medical Officers or of expenditure under Public Works Department. Cost of all drugs used is included.

LEVUKA HOSPITAL.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FIVE YEARS AND THE COST PER BED OCCUPIED.

Year.	Average daily number in hospital.	Expenditure.	Cost per head per day.		Total
			Personal Emoluments	Other Charges.	
		£ s. d.	d.	d.	d.
1931	11·6	958 8 2	20·2	34·1	54·3
1932	12·3	1,013 9 6	17·4	36·6	54·0
1933	13·0	1,012 6 5	16·3	34·9	51·2
1934	8·16	956 19 7	25·2	51·8	77·0
1935	11·11	982 2 6	19·62	38·61	58·23

Remarks.—Does not include salaries of Medical Officers or expenditure under Public Works Department. Cost of all drugs used is included.

LAMBASA HOSPITAL.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FOUR YEARS AND COST PER BED OCCUPIED.

Year.	Average daily number in hospital.	Expenditure.			Cost per head per day.		Total.
					Personal Emoluments.	Other Charges.	
		£	s.	d.	d.	d.	d.
1932	11·95	1,267	3	10	20·84	48·53	69·37
1933	22·5	1,408	8	8	11.8	29·3	41·1
1934	14·67	1,212	5	9	18·6	35.0	53·6
1935	20·05	1,485	8	7	13·91	34·81	48·72

Remarks.—Does not include salaries of Medical Officers or expenditure under Public Works Department. Cost of all drugs used is included.

LUNATIC ASYLUM.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FIVE YEARS AND COST PER PATIENT PER DIEM

Year.	Average daily number in asylum.	Expenditure.			Cost per head per day.		Total
					Personal Emoluments	Other Charges.	
		£	s.	d.	d.	d.	d.
1931	80·25	3,327	9	8	12·8	14·4	27·2
1932	80·2	3,415	7	5	15·1	12·8	27·9
1933	81·0	3,183	4	11	12·6	13·2	25·8
1934	79.0	3,261	10	7	12·8	14·4	27·2
1935	77·0	3,462	1	6	14·87	14·7	29·57

Remarks.—Expenditure under Public Works Department votes and Medical Officers salaries not included.

MAKONGAI CENTRAL LEPER HOSPITAL.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FIVE YEARS AND THE COST PER PATIENT PER DIEM.

Year.	Average daily number in Hospital.	Expenditure.			Cost per head per day.		Total
					Personal Emoluments	Other Charges.	
		£	s.	d.	d.	d.	d.
1931	465·92	12,488	4	0	6·7	10·9	17·6
1932	471·89	12,659	17	5	6·5	11·3	17·9
1933	450·16	12,846	15	8	7·0	11·8	18·8
1934	448·25	13,292	18	10	7·06	12·44	19·5
1935	510·29	13,359	13	10	5·89	11·32	17·21

Remarks.—Does not include expenditure under Public Works Department votes which was in 1934, £1,820 4s. 10d., on maintenance and £1,976 12s. 8d. on permanent improvements, and in 1935, £1,932 16s. 4d., on maintenance and £1907 2s. 11d. on permanent improvements.

RETURN SHOWING DAILY COST PER BED OCCUPIED DURING 1934 AND 1935 OF THE HOSPITALS AND ASYLUMS OF THE COLONY.

Hospital.	1934.			1935.		
	Aver. daily No. in Hosp.	Cost per head per day.		Aver. daily No. in Hosp.	Cost per head per day.	
		s.	d		s.	d.
Colonial War Mem. Hospital	106·5	6	0·6	118·07	5	8·14
Lautoka Hospital	49·0	3	9·2	49·83	3	9·13
Central Leper Hospital ..	448·25	1	7·5	510·29	1	5·21
Levuka Hospital	8·16	6	5·0	11·11	4	10·23
Lambasa Hospital	14·67	4	5·6	20·05	4	0·72
Public Lunatic Asylum ..	79·0	2	3·2	77·0	2	5·57
Penang Hospital	5·4	3	8·8	6·03	3	1·13
Nandi	8·19	3	5·1	14·20	2	0·8
Mba	15·81	0	11·6	16·84	0	9·38
Taveuni	17·5	1	4·0	11·8	2	3·79
Rewa	16·61	0	10·0	16·33	0	11·69
Kandavu	13·5	1	1·8	6·31	2	11·34
Nandronga	7·2	1	10·9	14·53	1	4·51
Ra	4·7	5	10·9	12·31	1	6·71
Mbua	14·61	0	10·1	14·34	1	0·33
Savusavu	24·87	0	10·57	13·65	1	4·11
Lau (Lomaloma)	3·92	2	6·0	5·89	3	7·97
Tholo East	16·81	0	8·0	15·4	0	8·7
Rotuma	3·1	8	6·5	6·31	3	5·2

APPENDIX B.

ISSUES FROM THE GOVERNMENT PHARMACY DURING 1935.

1. Medical Departments—

A—Hospitals and Dispensaries—	£	s.	d.	£	s.	d.
Mbengga	49	19	4			
Thikombia	5	3	5			
Colonial War Memorial	2,433	13	11			
Ndavuilevu	49	2	1			
Ndrauniivi	2	11	5			
Ndreketi	25	1	2			
Ngau	26	2	3			
Kandavu	75	19	6			
Koro	21	18	7			
Korolevi-i-wai	21	0	0			
Korovou	22	9	3			
Lambasa	563	16	11			
Lakemba	88	5	5			
Lautoka	856	3	7			
Lekutu	48	5	9			
Levuka	225	9	7			
Londoni	11	0	0			
Lomaloma	63	5	8			
Matuku	23	13	10			
Moala	21	16	6			
Momi	11	14	2			
Nambouwalu	58	11	9			
Nambutautau	19	3	3			
Nandarivatu	29	4	6			
Nandi	133	19	6			
Nanduruloulou	11	7	2			
Nandrau	3	10	4			
Nandronga	110	2	1			
Nailanga	49	18	2			
Nakasaleka	37	9	3			
Namarai	28	0	7			
Namata	32	14	2			
Namosi	23	6	7			
Nanukuloa	143	6	1			
Nasau	17	14	8			
Natewa	29	4	7			
Natuatuathoko	28	18	3			
Navatusili	5	16	6			
Navua	35	17	9			
Nayavu	40	13	4			
Penang	83	18	11			
Nggaliyalatina	7	6	0			
Rewa	33	19	0			
Rotuma	143	6	10			
Savusavu	144	8	11			
Serua	27	7	2			
Taveuni	182	5	1			
Viria	29	3	2			
Visonggo	28	8	7			
Vunindawa	48	18	11			
Wainimbokasi	217	5	8			
Wainunu	25	16	10			
Yasawas	19	14	10			
Total Hospitals and Dispensaries	....			6,467	10	9
B—Native Obstetric Nurses	....			15	8	0
C—Public Institutions—						
Public Lunatic Asylum	240	1	2			
Central Leper Station	910	14	0			
Total Public Institutions	....			1,150	15	2
Carried forward				7,633	13	11

Brought forward	....	7,633 13 11
D—Typhoid Immunization Campaign—		
Lambasa	£26 18 0	
Lakemba	11 5 0	
Navua & Serua	27 0 0	
N. W. Viti Levu	134 13 0	
Rewa	13 10 0	
Rotuma	67 10 0	
Savusavu	9 0 0	
Suva	8 2 6	
Total Typhoid Immunization	....	297 18 6
E—Other Medical Departments	....	361 15 4
Total Medical Departments	....	8,293 7 9
2. Provinces	....	15 10 7
3. Fijian Infant Welfare Scheme	....	381 15 2
4. Other Government Departments—		
Schools	47 18 2	
Police	6 7 6	
Yaws and Ringworm Campaign	5 16 2	
Gaol Infirmary	48 11 1	
Other Government Departments	136 14 9	
Total Government Departments	....	245 7 8
5. Native Land Commission Surveyors		7 5 6
6. Missions		45 0 6
7. Private Accounts	....	113 0 9
Total Issues from the Pharmacy	....	£9,101 7 11

APPENDIX C.

REVENUE, MEDICAL DEPARTMENT.

	1934.	1935.
Head IV—		
1. (i) Dairy Licences, Suva and Levuka	£34 15 0	£38 12 0
4. Drug Permits	17 10 0	13 15 0
Head V—		
23. Hospital Fees, Colonial War Memorial Hospital, Levuka, Lambasa & Lautoka Hospitals	2,735 19 8	3,374 18 7
25. Meat Inspection Fees	369 16 6	359 4 6
26. Central Leper Hospital Fees	2,908 2 7	3,096 11 4
27. Fees, Plantation Labourers, Lautoka and Lambasa Hospitals	1,200 0 0	1,000 0 0
28. Central Medical School	1,339 13 5	1,674 4 8
Head IX—		
2—(*a*) Makaluva and Nukulau Fees	87 3 6	70 4 0
(*b*) Sale of Government Drugs	115 7 3	139 18 7
(*c*) Fumigation and Disinfection Fees	174 0 2	129 8 10
(*d*) Sale of Stock	21 6 0	15 7 6
3. Sale of Produce, Makongai	100 4 9	198 12 2
4. Bakery Receipts Makongai	269 4 5	249 5 8
15. Ten per cent. Profits Makongai Canteen	10 16 0	14 0 4
Total	£9,383 19 3	£10,374 3 2

APPENDIX D.

ESTABLISHMENT.

The Medical Staff of the Colony as sanctioned for the year 1935 was:—

Administrative.—Director of Medical Services, 1; First Class Clerk, 1; Third Class Clerks, 2; Fourth Class Clerks, 2; Pharmacist, 1; Messenger, 1; Packers, 2.

Medical.—District Medical Officers, 12 (two of these are also District Commissioners); Native Medical Practitioners, 60; Indian Medical Practitioners, 5; Native Obstetric Nurses, 50.

Colonial War Memorial Hospital.—Medical Superintendent, 1; Assistant Medical Superintendent, 1; Native Dispenser, 1; Matron, 1; Assistant Matron, 1; Nursing Sisters, 4; European Probationers, 13; Nurse-Housekeeper, 1; Native Obstetric Nurses, 2; Native Nursing Pupils, 20; Steward and Clerk, 1; Servants, 24; Fourth Class Clerk, 1. Mechanic, 1; Hall Porter, 1.

Levuka Hospital.—Nurse in Charge, 1; Native Dispenser, 1; Nurses (native), 2; Servants, 4.

Lunatic Asylum.—Head Attendant, 1; Assistant Attendant, 1; Female Resident Attendant, 1; Native Attendants, 9 male, 6 female; Servants, 2.

Central Leper Hospital.—Medical Superintendent, 1; Lay Superintendent, 1; European Nursing Sisters, 15; Native Sisters, 10; Overseer, 1; Native Constables, 3; Servants, 19; Leper Patients employed as Servants, Headmen or School Teachers, 12; Bakers, 4.

Lambasa Hospital.—Nurse in Charge, 1; Native Medical Practioner, 1; Native Nurses, 2; Servants, 5.

Lautoka Hospital.—Native Medical Practitioner, 1; Matron, 1; Nursing Sisters, 3; Dresser, 1; Native Nurses, 7; Servants, 10.

Sanitary—(1) General.—Medical Officer of Health, Suva, 1; European Sanitary Inspectors, 3; Fijian Sanitary Inspector, 1; Indian Sanitary Inspectors, 2; Police Officers who are also Sanitary Inspectors, 6; European Caretaker, Quarantine Station, 1; Indian Caretaker, Quarantine Station, 1; Bacteriologist, 1.

(2) *Ankylostomiasis Campaign.*—Indian Sanitary Inspectors, 5.

MEDICAL STAFF POSTINGS.

The Medical Staff postings on 31st December, 1935, were:—

A. H. B. Pearce, L.R.C.P. & S. (Edin.), L.F.P.S. (Glasgow); D.P.H. (Dublin), F.R. San. I, Director of Medical Services.

P. Harper, M.D. (Dunelm), M.R.C.S., L.R.C.P., District Medical Officer, Lautoka.

C. H. B. Thompson, M.R.C.S., L.R.C.P., D.P.H. (St. Andrews), D.T.M. (Liverpool), Medical Officer of Health, Suva.

W. M. Ramsay, L.R.C.P. & S. (Edin.), L.F.P.S. (Glasgow), District Medical Officer, Rewa.

A. J. Borg, M.D. (Malta), District Medical Officer, Mba.

H. S. Evans, M.R.C.S., L.R.C.P., District Medical Officer and District Commissioner, Taveuni.

T. Clunie, M.B., Ch.B. (Aberdeen), Medical Superintendent, Colonial War Memorial Hospital.

F. E. Montague, M.R.C.S., L.R.C.P., District Medical Officer, Lambasa.

M. L. McCauley, M.B., Ch.B., B.A.O. (Dublin), District Medical Officer, on leave.

R. J. Snodgrass, L.R.C.P. (Edin.), L.R.C.S., L.D.S., R.C.S.E., District Medical Officer, Ra.

C. J. Austin, M.B., Ch.B. (Edin.), Medical Superintendent, Makongai Leper Asylum.

W. G. MacNaughton, M.B., Ch.B. (Glasgow), District Medical Officer, Levuka.

G. T. Barnes, M.B., Ch.B. (Birmingham), D.T.M. & H. (Eng.), District Medical Officer, Nandronga.

W. Foskett, M.C., M.D. (Dunelm.), B.S., District Medical Officer, SavuSavu.

W. Worger, M.R.C.S. (London), L.R.C.P. (England), District Medical Officer, on leave.

F. Widlake, L.M.S.S.A. (London), on leave.

D. C. M. Macpherson, M.B., Ch.B. (Glasgow), D.T.M. (Liverpool), C.P.H. (Johns Hopkins), Acting Government Bacteriologist and Pathologist.

D. W. Hoodless, B.Sc. (Lon.), L.M.S.S.A., Principal, Central Medical School.

R. W. D. Maxwell, M.B., Ch.B. (N.Z.), Assistant Medical Superintendent, Colonial War Memorial Hospital.

Leave.—Dr. A. H. B. Pearce, 1st January to 10th January; Dr. F. Widlake, 1st January to 31st December; Dr. W. Foskett, 1st January to 5th August; C. A. Brabant, 1st January to 30th May; Dr. D. W. Hoodless, 1st January to 6th August; Miss E. F. Hughes, 1st January to 14th November; Rev. Sister Mary Theodore, 1st January to 8th April; H. E. Ellis, 1st January to 11th March, and 20th December to 31st December; Mrs. D. St. G. Ryder, 15th February to 19th September; Miss G. Faddy, 10th March to 9th June; C. Kendrick, 12th April to 31st December; Dr. W. Worger, 14th April to 31st December; Dr. F. E. Montague, 11th June to 14th November; J. Taubale, 1st July to 30th September; J. G. C. Campbell, 19th November to 31st December; Miss M. Carew, 4th July to 31st December; Dr. M. L. McCauley, 26th November to 31st December.

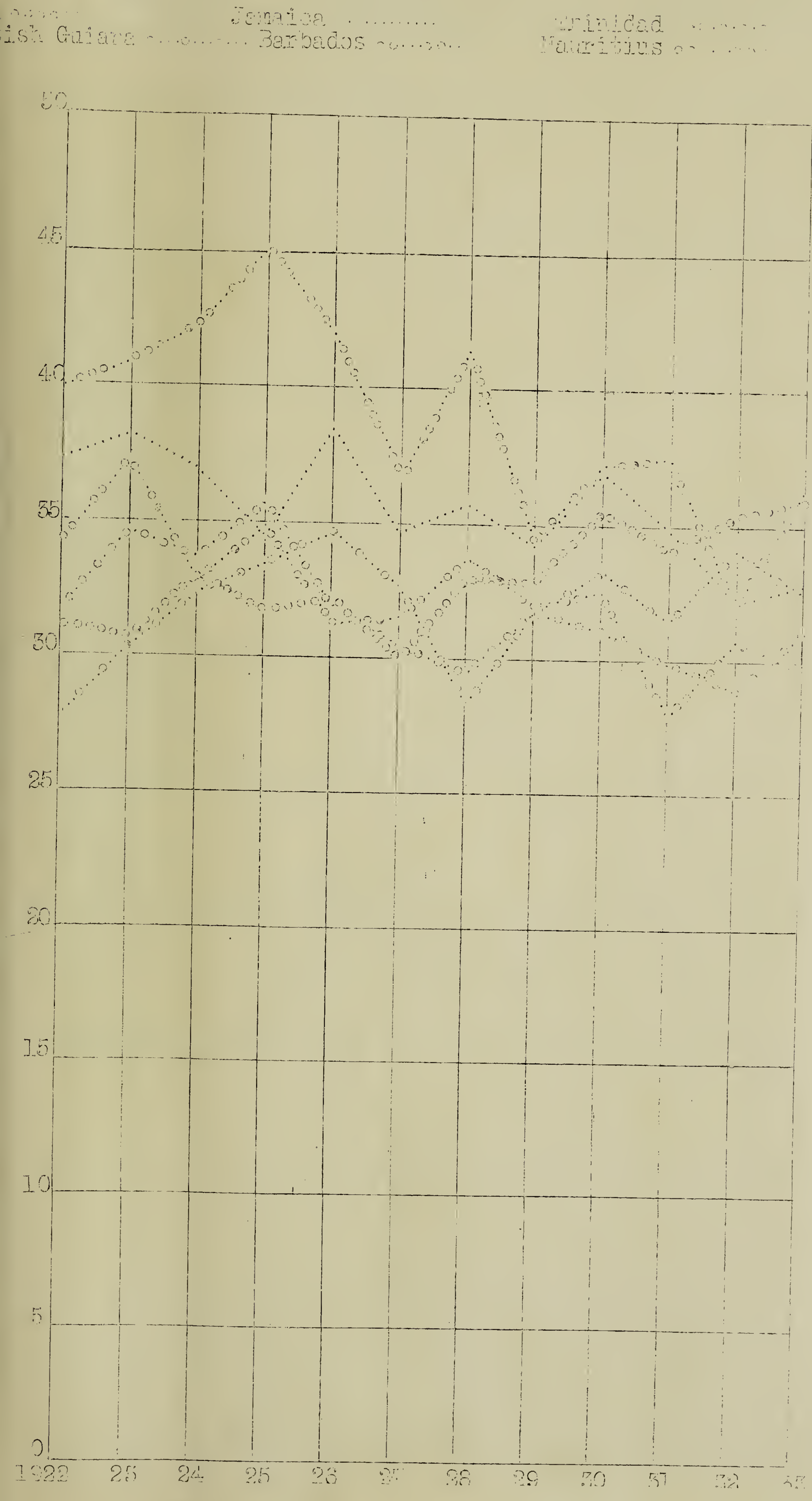
APPENDIX E.

SUVA RURAL SANITARY DISTRICT.

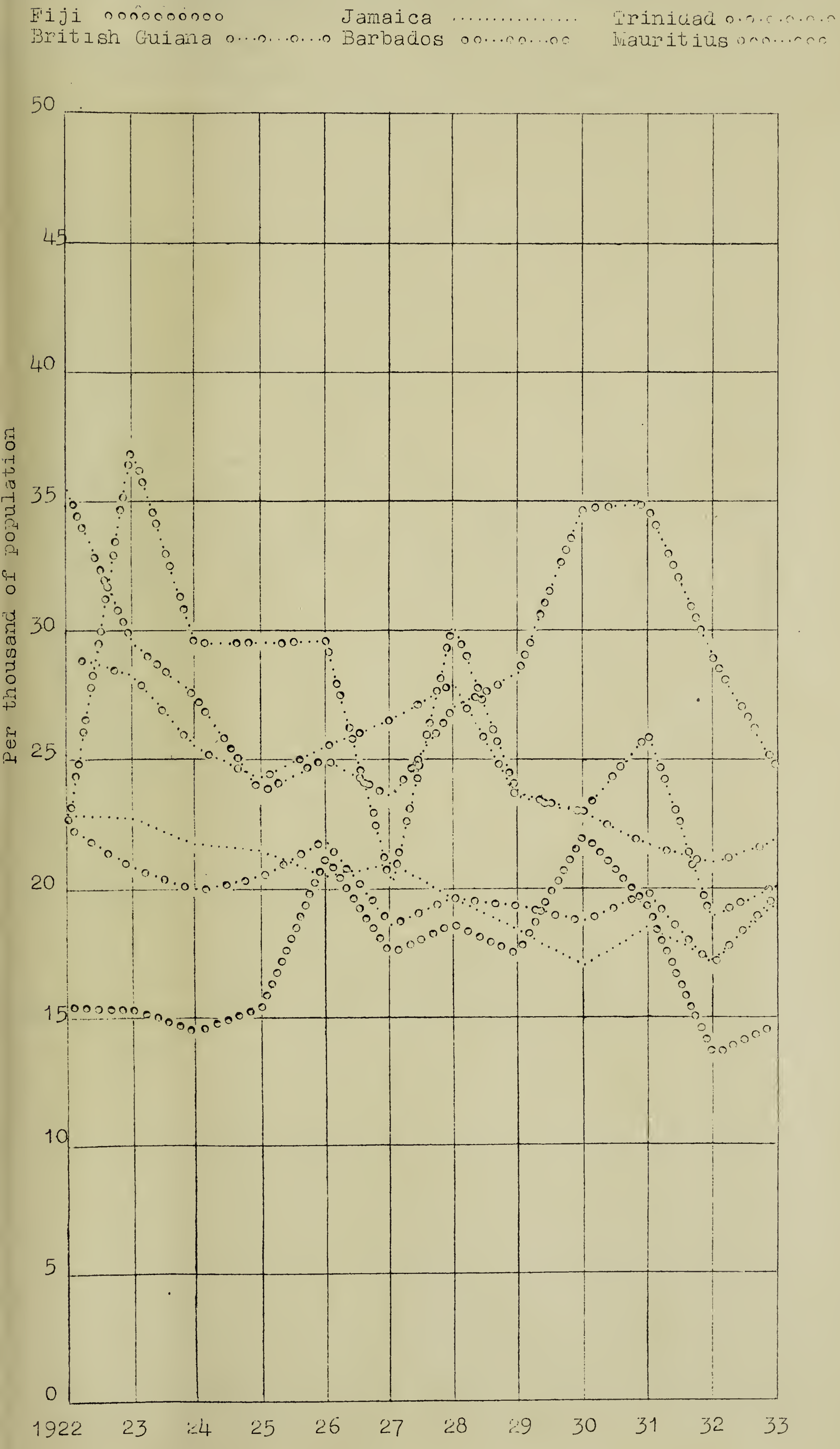
TABLE G.S. I.—NUMBER AND TYPES OF BUILDINGS INSPECTED (DECEMBER, 1935).

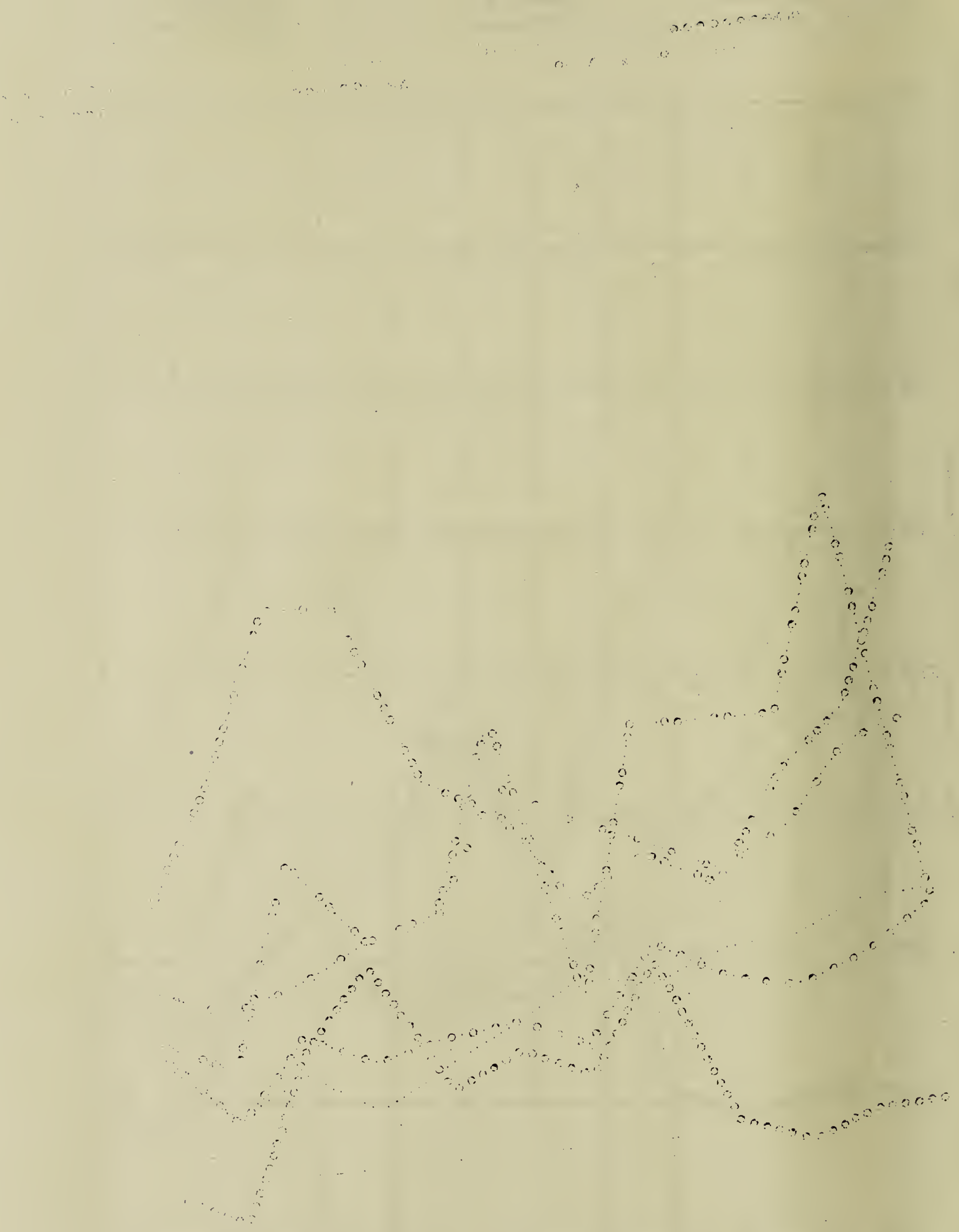
Section.	Premises inspected.	Grass buildings.	Wooden buildings.	Tin buildings.	Concrete buildings.	Private dwellings.	Tenement buildings.	Stores, &c.
A	210	90	58	61	1	207	..	3
B	165	23	47	92	3	150	10	5
C	259	22	37	200	..	242	9	8
D	385	151	7	227	..	383	..	2
E	265	30	92	138	5	258	4	3
F	424	50	53	320	1	385	24	15
G	137	37	41	58	1	135	..	2
H	169	72	18	78	1	166	..	3
Totals	2,014	475	353	1,174	12	1,926	47	41

G R A P H
showing
h-rate in principal sugar-producing Colonies of the Empire.

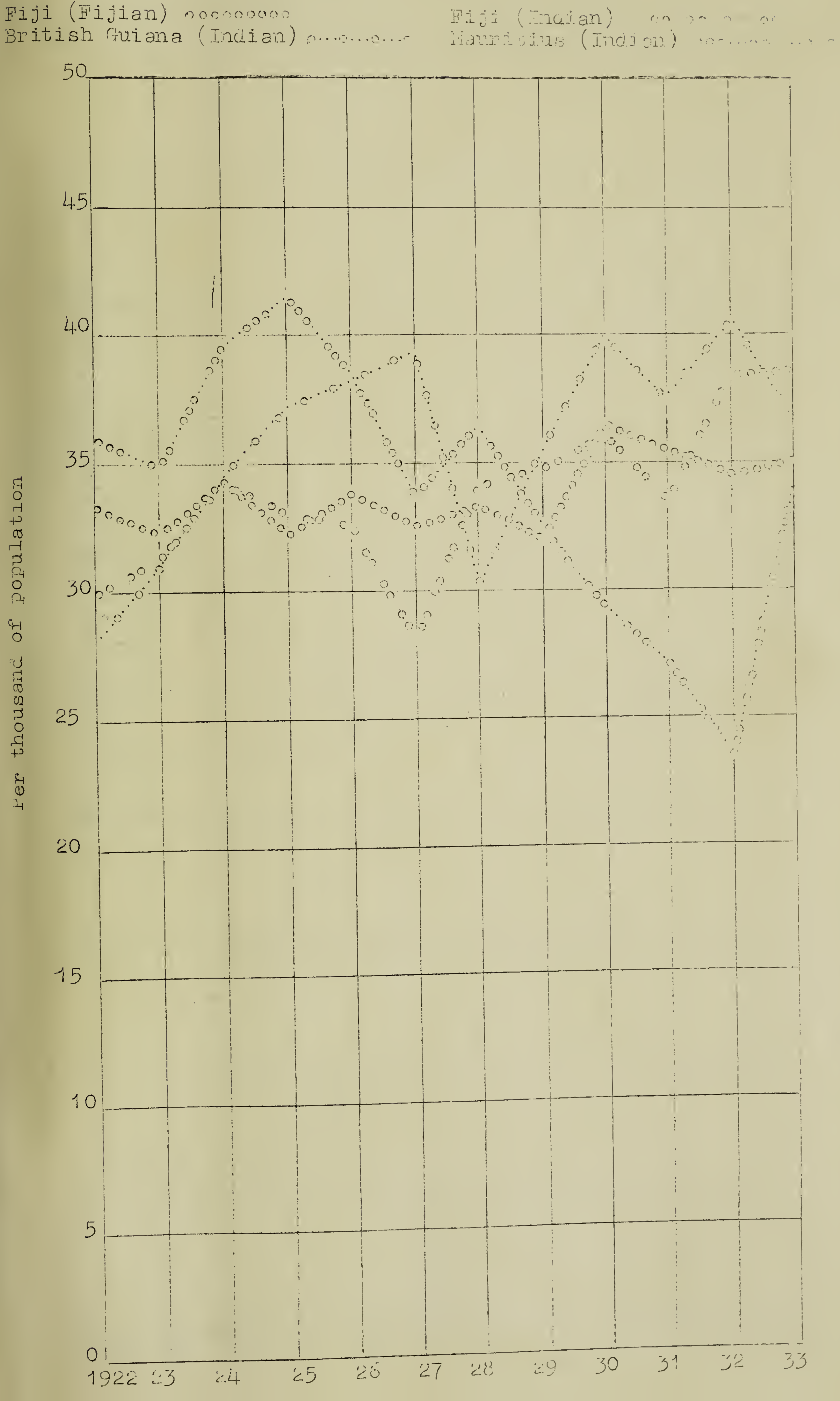


GRAPH
showing
Death-rate in principal sugar-producing Colonies of the Empire



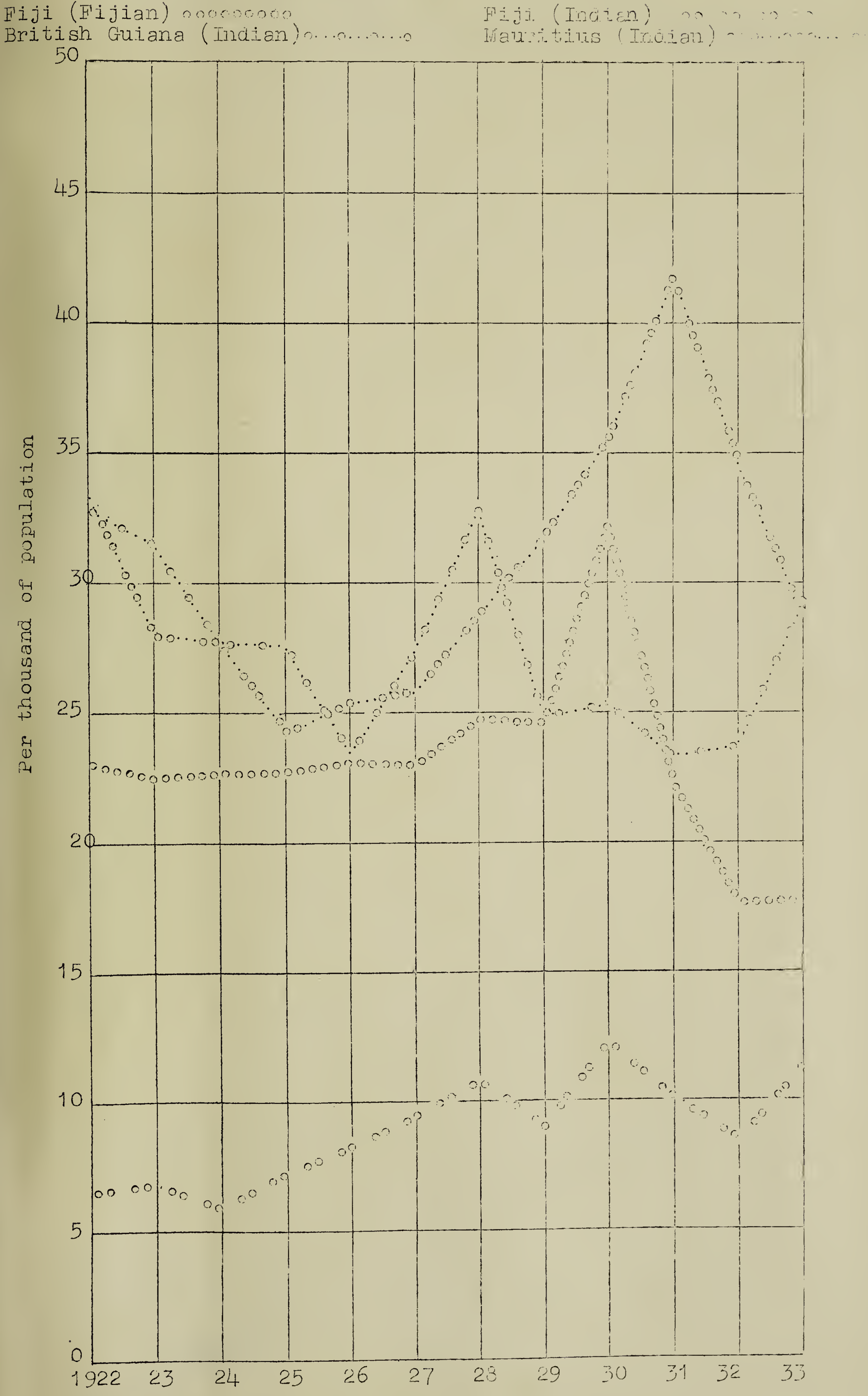


GRAPH
showing
Birth-rate of Fijians and Indians in Fiji and of Indians
in British Guiana and Mauritius

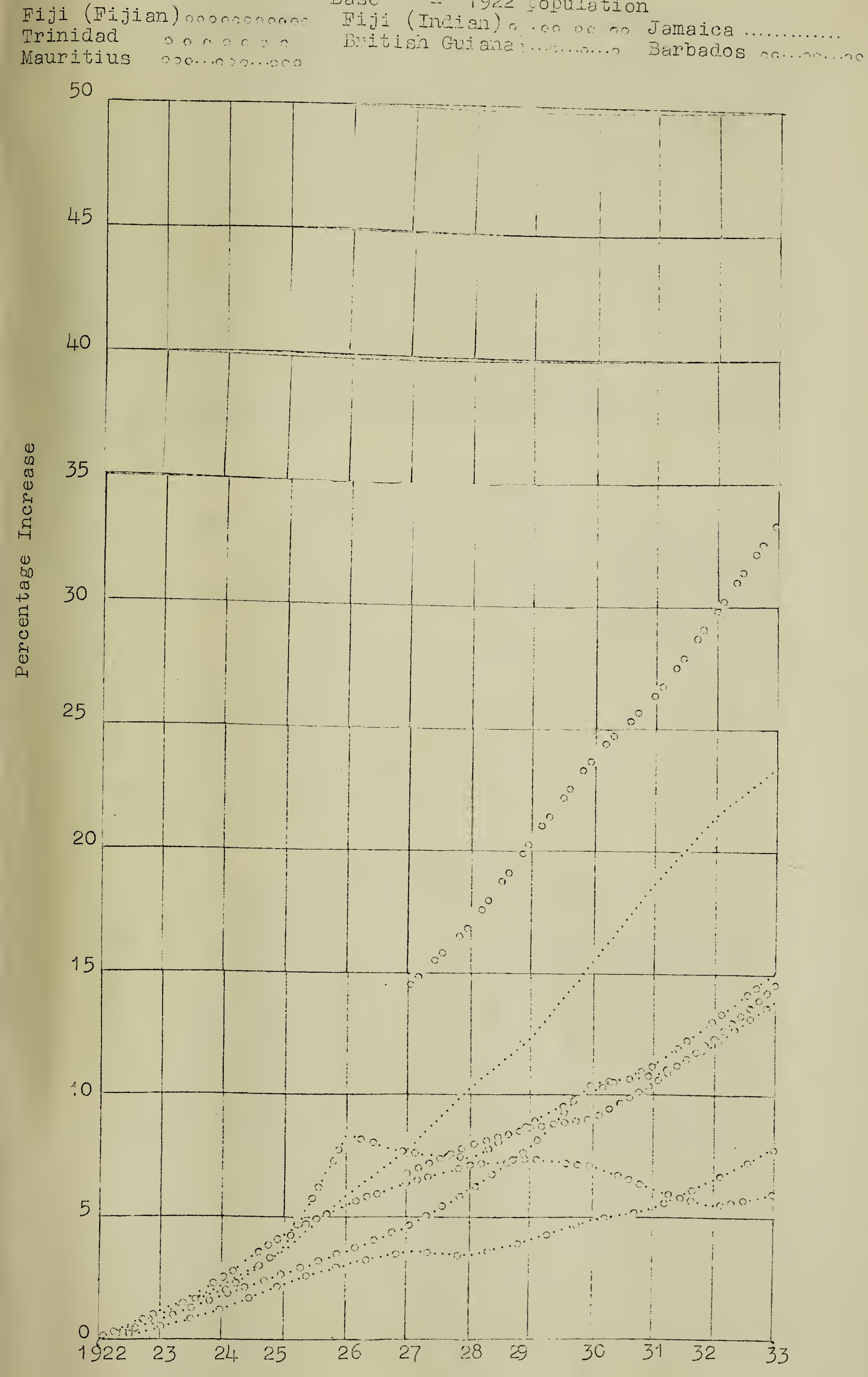


GRAPH
showing

Death-rate of Fijians and Indians in Fiji and of Indians in British Guiana and Mauritius



G R A P H
showing
Percentage increase of population in principal sugar-producing Colonies of the Empire
Base = 1922 population



SUVA RURAL SANITARY DISTRICT.

TABLE G.S. II.—DISTRIBUTION OF POPULATION AND RACES (DECEMBER, 1935).

Sec.	Premises.	Pop.	Europeans.			Indians.			Fijians.*			Chinese.		
			Prem.	Pop.	Avg.	Prem.	Pop.	Avg.	Prem.	Pop.	Avg.	Prem.	Pop.	Avg.
A	Empty 24													
	Occupied 186	772	49	203	4·1	18	113	6·3	84	367	4·4	35	89	2·8
B	Empty 10													
	Occupied 155	737	37	160	4·3	82	443	5·4	24	109	4·5	12	25	2·0
C	Empty													
	Occupied 259	1,207	9	34	3·8	226	1,079	4·8	18	76	4·2	6	18	3·0
D	Empty 61													
	Occupied 324	1,316	5	38	7·7	248	1,048	4·2	46	186	4·4	25	44	1·8
E	Empty 37													
	Occupied 228	1,068	48	200	4·3	125	627	5·0	50	225	4·5	5	16	3·2
F	Empty 6													
	Occupied 418	2,194	3	21	7·0	369	2,001	5·4	41	162	4·0	5	10	2·0
G	Empty 28													
	Occupied 109*	588	21	92	4·4	78	437	5·6	9	58	6·4	1	1	1·0
H	Empty 15													
	Occupied 154	807	2	8	4·0	117	605	5·3	30	180	6·0	5	14	2·8
	Empty 181													
Totals	Occupied 1,833	8,689	174	756	4·4	1,263	6,353	5·0	302	1,363	4·5	94	217	2·2

* Includes Solomon Islanders, &c., but only includes Fijians living outside native Koros.

Forty-seven tenement buildings having 224 rooms are occupied by 470 persons; average persons per tenement building, 10; average persons per tenement room, 2·1.

SUVA RURAL SANITARY DISTRICT.

TABLE G.S. III.—SANITARY ACCOMMODATION (DECEMBER, 1935).

Section.	Premises.	Served by cement slab latrines.	Served by box seat latrines over pit.	Served by septic tanks.	Served by drop latrines or pan latrines.	Unoccupied premises approved sanitary accommodation before re-occupation	Premises not provided with sufficient sanitary accommodation.
A	210	147	30	28	5	. .	. .
B	165	123	3	38	1	. .	. .
C	259	244	3	12	. .	. .	. .
D	385	374	1	. .	. .	9	1*
E	265	179	13	71	. .	1	1*
F	424	396	15	12	. .	1	. .
G	137	85	5	31	13	3	. .
H	169	155	2	9	. .	2	1*
Totals	2,014	1,703	72	201	19	16	3*

* Two blind, one destitute.

SUVA RURAL SANITARY DISTRICT.

TABLE G.S. IV.—WATER SUPPLY AND BATHROOMS (DECEMBER, 1935).

Section.	Premises inspected.	Pipe supply.	Tanks.	River.	Wells.		Bathrooms.	
					Protected.	Unprotected.	Cemented & drained.	Otherwise.
A	210	98	43	33	22	14	29	3
B	165	120	22	. .	21	2	56	21
C	259	124	22	. .	112	1	79	5
D	385	14	80	55	183	53	. .	. .
E	265	202	18	. .	35	10	78	53
F	424	218	26	. .	170	10	120	29
G	137	73	19	. .	21	24	25	10
H	169	12	33	9	88	27	2	2
Totals	2,014	861	263	97	652	141	389	123

REPORT BY DR. C. H. B. THOMPSON, MEDICAL OFFICER OF HEALTH AND PORT HEALTH OFFICER, SUVA, FOR THE YEAR 1935.

General.—Bacillary dysentery, chiefly of the Shiga variety, has been prevalent during the year, principally in the north-west districts of Viti Levu. For the first two quarters of the year 360 and 311 cases were notified and for the last two quarters 127 and 96. Otherwise the health of the community has been good.

Meteorological.—The total rainfall for the year was 163·62 inches, as against 134·33 inches for 1934, the average rainfall for the last 51 years being 119·51 inches. This constitutes the fourth highest recorded annual rainfall. The total number of days on which rain fell was 281, which is the highest recorded since 1916.

Staff Movements and Appointments.—Mr. H. E. Ellis, Meat and Sanitary Inspector, resumed duty after six months' leave on 12th March. Mr. Ellis proceeded to Mba on duty for three weeks during June. Mr. Ellis was granted seven weeks' leave from 20th December to proceed to Australia on medical grounds. Mrs. D. St. George Ryder proceeded on leave on 15th February, and resumed duty on 20th September.

PORT OF SUVA.

Infectious diseases in or in the vicinity of ports in communication with Fiji:—

Disease.	*Ports or countries.*	*Quarters of year.*
Chicken-pox	Los Angeles, San Francisco, Vancouver, Victoria, B.C., Honolulu	1, 2, 3, 4
Cholera	Calcutta	1, 2, 3, 4
Influenza	Los Angeles	2, 3, 4
	San Francisco and Honolulu	3, 4
	New Zealand & Australian ports	2, 3, 4
	Gilbert and Ellice Islands	2
	Ocean Island (epidemic)	3
Malaria	Balik Papan, New Guinea, Singapore, Panama Canal Zone, Kobe, Dutch East Indies, and India	1, 2, 3, 4
	Cloncurry, Queensland	3
Poliomyelitis	Los Angeles and San Francisco	1, 2, 3, 4
	Honolulu	3
Plague (human or rodent)	Colombo and Java	1, 2, 3, 4
	Calcutta	2
	Hawaii Island	1, 2, 3, 4
Small-pox	Los Angeles and Calcutta	1, 2, 3, 4
	Shanghai and Singapore	1, 2, 3, 4
	Colombo	1, 2
Typhus	Honolulu	1, 3, 4
	Shanghai	3
	Los Angeles	4
Weil's Disease	North Queensland	3

Vessels granted pratique, 149 (British, 93; foreign, 56); registered tonnage, 840,226 tons
Vessels refused pratique, nil.
Vessels granted provisional pratique, 3.
Vessels fumigated, 87 (overseas, 9; Fijian, 78).
Vessels from plague infected or suspected ports, 1.
Vessels searched for mosquitoes, 22 (inside harbour, 15; outside harbour, 7).
Vessels placed in quarantine, 1.*

Medical inspections.—

	1935.		1934.	
Passengers	3,957	(landing, 3,197; through, 760.)	3,247	(landing, 2,527; through, 720.)
Crews	2,496		2,364	
Labour	5		25	
Total	6,458		5,636	

Persons placed in quarantine upon arrival from overseas, 486 (Indians).
Persons landed under surveillance or subject to undergoing treatment, 9.
Persons refused permission to land, nil.
Crew not allowed to land, 2.
Articles disinfected at Disinfection Station, 392.

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* Case of dysentery amongst crew of cutter "Caucaunitoba."

Quarantine of passengers ex s.s. "Elephanta."—The s.s. "Elephanta" arrived from Calcutta on 6th November with 486 passengers. The passengers, after medical inspection, were transferred to Nukulau Quarantine Island. No sickness occurred and quarantine was lifted on 9th November.

Preventive health measures taken prior to or during voyage included:—

(*a*) crew—vaccinated against small-pox and cholera in Calcutta by ship's surgeon;
(*b*) passengers—at Calcutta vaccination against small-pox and cholera.

On voyage vaccination against typhoid and hookworm treatment given.

Medical Inspection by Quarantine Officer, Suva:—

(*a*) crew inspected and found healthy;
(*b*) passengers inspected with following results:—
1 adult scabetic and with history of loss of power in both legs; when seen on board temperature 100°; not considered infectious;
1 woman and child with mild form of trachoma;
1 woman anæmic, 45 per cent. Hbg;
2 male adults—debility;
3 cases without old vaccination scars and doubtful or no recent scars;
1 child with abscess of face;
4 cases chronic conjunctivitis.

Some 10 to 15 per cent. of the passengers were dirty as to their body or belongings, or both.

R.M.S. "Aorangi" arrived January 17th with a member of the crew developing sickness on the day of arrival which was diagnosed as small-pox on arrival at Sydney. No secondary cases developed on board, at Suva or other ports of call.

INFECTIOUS DISEASES.

(See Tables I, II and III appended).

Diphtheria.—Twenty-four cases notified for the Colony—16 from Suva, from which K.L.B. was isolated in more or less pure culture.

Dysentery.—As mentioned above, dysentery, chiefly of the Shiga variety, was prevalent in some of the Viti Levu districts (see Table I). For the first half of the year the monthly incidence varied from 65—164 with a total of 671 cases for the six months. For the second half of the year the monthly incidence varied from 20 to 54 with a total of 223. With the advent of the colder weather, in July, there was a considerable drop in the number of cases notified. Clinically, the type appears to have been less severe, with a lower mortality, than in the 1929–30 epidemic.

From Suva—urban and rural—district 82 cases, with 9 deaths, were reported, giving a mortality rate of 11 per cent., as compared with 8·8 per cent. for the Colony, and is perhaps explainable by the tendency of severer cases to gravitate towards Suva and its hospital. From specimens submitted to the Bacteriological Laboratory the following results were obtained:—Shiga, 30; Schmitz, 8; Flexner, 5; Sonne, 1; Histolytica, 7; Negative, 31. Sixteen cases of dysentery, reported as amœbic but not confirmed by laboratory tests, came from Taveuni during November and December. Deaths reported from dysentery are as follows:—

District.	*Deaths.*	*Total cases.*	*Mortality.*
Suva	9	82	11 per cent.
Mba and Tavua	19	154	12·3 ,,
Lautoka	7	130	5·4 ,,
Nandi	6	76	7·9 ,,
Nandronga..	9	138	6·5 ,,
Ra	18	170	10·6 ,,
Rewa	4	64	6·2 ,,
Total ..	72	814	8·84 per cent.

Sickness at Lami.—An outbreak of sickness occurred at Lami during November and early December affecting some dozen families with 18 cases of sickness. With one exception the cases were all children who had fever in a moderate degree, with vomiting and constipation rather than diarrhœa, the fever lasting usually one to three days. As the complaint appeared to be of an infectious nature and confined to children all Lami children were excluded from school for the remaining 10 days of the school term. One death ocurred in a European child of five years of age, who with her brother aged seven years, also seriously ill, had consumed shell fish from the shore nearby. The Shiga bacillus was reported from one sample of live shell fish in the neighbourhood but was not recovered from the patients in question or from other affected children.

Dysentery at Namboro.—A small outbreak of dysentery occurred at Namboro amongst the native labour working on the Suva–Singatoka road towards the end of October. All the cases, 23 in number, were brought to Suva and admitted to hospital. Schmitz para-Shiga bacillus was isolated from four of the cases. A visit was made to Namboro and other areas occupied by the affected gangs by the Medical Officer of Health on 21st October. Namboro camp, which was low-lying and unsuitable and not intended for more than temporary occupation, was evacuated, the men being transferred to a healthier site and a Native Medical Practitioner put in charge. Whilst the heavy, almost continuous, rainfall was responsible for delaying the road work and uncomfortable conditions, it was probably also responsible for the complete absence of flies which might have been expected in large numbers under the prevailing sanitary conditions, this no doubt was a useful factor in limiting the outbreak.

Queen Victoria School, Nasinu.—In connection with cases of dysentery being reported by the Visiting Medical Officer, a detailed inspection of the above school was made by the Medical Officer of Health on 17th March. The general sanitary condition of the school and grounds was found to be good, though flies and fly-breeding were in evidence to a minor extent. A report was submitted to the Chief Medical Officer containing recommendations for improved methods of garbage disposal, &c.

Visit to Ra in connection with Dysentery outbreak.—Early in the year a visit was made to Ra by the Medical Officer of Health in conjunction with the Chief Medical Officer, and Dr. Lambert. Villages, their water supplies, latrines, and the two hospitals were inspected.

Conjunctivitis.—An inspection was made by the Medical Officer of Health of the eyes of the pupils of the Girls' Grammar School in December. Besides one or two mild cases, two definite cases of the granular or trachomatous variety of conjunctivitis were discovered. These two pupils are receiving treatment at the Health Office.

Enteric Fever.—One hundred and nine cases of typhoid fever were reported for the Colony, an increase of 51 cases over the 1934 figures. Savusavu accounted for 18 cases which occurred between the end of May and beginning of July. From Suva district 13 cases, with two deaths, were reported.Two of these cases were pupils at the Ballantyne Memorial School. The pupils at this school all received two inoculations of T.A.B. vaccine. The whole of Suvavou village, where a death from typhoid occurred, was also inoculated in the same way and the village quarantined. No further cases occurred.

Dropsy (*epidemic*).—The 15 cases notified for the year—Fijians 10, Indians 2 and Chinese 3—all occurred at Suva Gaol between January and April. In connection with these cases an inspection of the Gaol buildings was made by the Medical Officer of Health and certain suggestions submitted with a view to improving sanitary conditions of some of the latter. Samples of the rice supplied to the institutions are examined periodically. Though these cases of dropsy which occur at the Gaol are still labelled " epidemic " there are marked differences epidemiologically from the outbreaks of past years among the Indian community. These differences have been referred to in a previous report.

Influenza.—The figures for 1935 show a decrease of 1,757 on those of the previous year.

A case of Meningococcal Septicæmia occurred in a male adult Chinese who had been in the Colony for several years and who died on 27th November. The Meningococcus (type not known) was grown in pure culture from his blood. The cerebro-spinal fluid unfortunately was not investigated, the true nature of the case not being suspected. This is the first case of Meningococcal infection reported in Fiji.

Infectious disease inquiries and examinations made by Medical Officer of Health and, or, Health Office Staff in Suva district:—

Visits re pulmonary tuberculosis	23
Visits re other infectious diseases	391
Examination of discharged lepers	23
Examination of contacts of lepers	105
Examination of suspected lepers	14

Vaccination and Inoculation.—T.A.B. inoculations, 1,132; vaccinations against small-pox, 573; including 222 at certain schools and 351 among those below school age in various native villages of the Suva area.

In connection with vaccination against small-pox it is of interest that, through the courtesy of Dr. H. de Rook, a small supply of dried lymph (calf vaccine) has been received by the Director of Medical Services from Dr. Otter of the Pasteur Institute, Bandoeng, Java. A report on the results of vaccination with this lymph will be submitted when it has been tried out.

FOOD DISEASES.

See epidemic dropsy.

CHILD WELFARE.

One morning in each week has been devoted to visits to various Welfare Centres, the supervision of the Committees' activities, and to inspection of the native houses, latrines and water supplies of the villages in the Suva area. Vaccination of infants and children under school age was commenced in the latter part of the first quarter of the year. The following are areas visited and number of visits made:—

Area.	*No. visits.*	*Area.*	*No. visits.*
Nasese	97	Langgere	34
Rewa Street	47	Tamavua River ..	90
Flagstaff	54	Kalekana	22
Asylum Road	52	Vunindilo	10
Samambula	7		
		Total ..	413

During February the Medical Officer of Health made a tour of inspection of Fijian villages in the Wainikololevu valley, Namosi province, where a number of villages were re-inspected, Naraiyawa and Korowaiwai being inspected for the first time. Child Welfare work was discussed and some of its activities demonstrated to Turaga-ni-koros and Child Welfare Committees and others. Water supplies (one of which was condemned for drinking purposes), the percentage of vaccinations against small-pox, and the incidence of yaws and of eye trouble were investigated. Practical demonstration on the treatment of conjunctivitis and on fly-breeding were given to Turaga-ni-koros, women's committees and others, and the importance of parental control, to prevent promiscuous defæcation by children, was emphasised.

ANTI-MOSQUITO WORK.

All unoccupied Crown lands in Suva district have been regularly cleared of bush, &c., drains maintained, and all deposits of empty tins, bottles, &c., collected and buried. Pools of stagnant water, &c., wherever existing, have been oiled to prevent mosquito breeding.

SUVA RURAL AREA.

House-to-house inspection has been steadily maintained in this area, and 3,040 inspections and 1,856 re-inspections have been made.

Sanitation, Suva Point.—The sanitation at Suva Point Settlement has been greatly improved by the employment of one whole-time man in clearing drains and outlets and collecting rubbish, &c.

Rewa Dairy Company.—Nine samples of this Company's pasteurised milk were submitted to the Government Bacteriologist for examination. The standard plate count ranged from 1,200 to 3,600.

LEGAL PROCEEDINGS.

Prosecutions.—

Vessel from overseas (yacht " La Karrigane ") failing to call at Suva as first port of entry	1
Failure to protect well from contamination	1
Failure to maintain latrines in good order	7
Failure to maintain drain in good order	1
Failure to remove accumulation	1
For giving false information in regard to a case of sickness	1

Total fines, including costs, £6.

HEALTH LEGISLATION.

Ordinances.—

Municipal Institutions (Amendment) Ordinance 1935.
Public Health (Amendment) Ordinance 1935.
Public Health Ordinance (No. 29 of 1935).
Towns Ordinance 1935.
Townships (Amendment) Ordinance 1935.

Regulations.—

Municipal Building Regulations.
Quarantine (Amendment) Regulations 1935—Quarantine Signals.
Quarantine (Amendment) (No. 2) Regulations 1935.

Proclamations.—

Whooping Cough declared to be an infectious disease.
Levuka proclaimed a Township.
Levuka suspended from operation of section 8 of Townships Ordinance 1928.

By-laws.—

Mba—Dwelling-houses.
Suva Urban—Animals, 1935.
Suva Urban—Dairies and sale of milk (amended).
Tavua—Dwelling-houses.
Tavua—Privies.

Notices.—

Boundaries of Rural Sanitary districts of Mba and Tavua.
Members of Tavua Local Authority.
Members of Nausori Township Board.

TABLE I.—INFECTIOUS DISEASES—NOTIFICATIONS BY DISTRICTS.—1935.

Disease.	Suva Urban.	Suva Rural.	Mba and Tavua.	Mbua.	Tholo East.	Tholo North.	Kandavu.	Lau.	Lautoka.	Lomaiviti.	Mathuata.	Nandi.	Nand-ronga.	Navua.	Ra.	Rewa.	Rotuma.	Savusavu.	Taveuni.	Totals 1935.	Totals 1934.	1935 compared with 1934.
Ankylostomiasis	63	36	11	..	2	..	..	3	7	37	172	10	8	6	4	40	..	1	9	409	326	+83
Broncho-pneumonia ..	..(4)*	2 (6)*	18	3	..	1	..	1	9	5	1	3	2	1	10	25	..	1	1	83	48	+35
Chicken-pox	10	3	..	..	1	..	..	8	4	..	..	..	2	..	..	6	..	..	..	34	8	+26
Diphtheria	6	10	2	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	24	18	+6
Dysentery (bacillary and amœbic)	25 (1)*	57 (8)*	154	..	7	1	7	10	130	9	11	76	138	33	170	64	..	..	25	917	399	+518
Enteric fever	6	7 (2)*	5	..	..	..	..	5	2	1	8	19	14	..	8	16	..	18	..	109	58	+51
Epidemic dropsy	..	15†	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	9	+6
Infantile paralysis . ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	−2
Influenza	..	..	69	43	..	3	..	50	6	..	40	..	38	74	4	102	..	86	2	517	2,274	−1757
Leprosy	1	14	6	2	..	..	1	1	1	2	5	7	2	2	1	8	7	..	..	60	52	+8
Measles	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	−1
Puerperal fever	1	..	1	..	..	..	..	..	..	..	..	4	..	..	..	1	..	..	..	7	3	+4
Scabies	..	..	42	27	44	14	3	40	28	72	121	76	89	263	82	216	330	76	6	1,529	1,808	−279
Scarlet fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trachoma	..	..	10	..	13	1	..	14	5	11	31	20	27	13	1	9	..	8	1	164	156	+8
Tuberculosis, pulmonary ..	6 (8)*	12 (5)*	12	6	5	2	5	2	9	23	17	12	10	19	21	50	..	3	2	216	289	−73
Tuberculosis, other forms	..	.. (2)*	4	..	..	..	1	..	1	2	1	4	1	1	2	5	..	..	..	22	23	−1
Undulant fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Venereal disease	15	9	17	1	..	..	..	3	18	..	40	6	..	3	2	6	..	..	..	120	89	+31
Yaws	..	13	45	123	197	7	13	195	47	79	156	..	354	86	46	204	883	161	3	2,612	1,667	+945
Totals ..	133 (13)*	178 (23)*	396	205	269	29	30	332	273	241	603	237	685	501	351	752	1,220	354	49	6,838	7,230	−392

* Deaths notified. † All occurred at Suva Gaol.

TABLE II.—INFECTIOUS DISEASES NOTIFICATIONS (CASES) BY NATIONALITIES.—1935.

Disease.	Europeans	Half-castes.	Fijians.	Poly-nesians.	Rotumans.	Indians.	Chinese.	Totals.
Ankylostomiasis	3	6	119	8	1	270	2	409
Broncho-pneumonia	2	2	61	1	..	17	..	83
Chicken-pox	6	4	22	..	..	2	..	34
Diphtheria	14	3	1	..	..	6	..	24
Dysentery (bacillary and amœbic)	32	17	550	5	3	306	4	917
Enteric fever	1	2	56	..	..	50	..	109
Epidemic dropsy	..	..	10	..	..	2	3	15*
Infantile paralysis	..	..	..	..	..	..	..	..
Influenza	..	5	433	2	1	76	..	517
Leprosy	2	1	10	2	7	36	2	60
Measles	..	..	..	..	..	..	..	..
Puerperal fever	..	..	1	..	..	6	..	7
Scabies	2	2	1,036	5	331	152	1	1,529
Scarlet fever	..	..	..	..	..	..	..	..
Trachoma	1	2	110	1	2	48	..	164
Tuberculosis, pulmonary	1	4	148	2	..	58	3	216
Tuberculosis, other forms	..	..	20	..	..	2	..	22
Undulant fever	..	..	..	..	..	..	..	..
Venereal disease	12	..	12	2	..	87	7	120
Yaws	..	2	1,716	5	883	6	..	2,612
Totals ..	76	50	4,305	33	1,228	1,124	22	6,838

* All occurred at Suva Gaol.

TABLE III.—INFECTIOUS DISEASES—MONTHLY INCIDENCE (CASES).—1935.

Disease.	Area.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.	
Ankylostomiasis	A	3	1	4	9	14	30	..	..	..	1	1	..	63	
	B	3	..	17	..	..	2	..	..	..	4	4	6	36	409
	C	8	6	12	58	32	36	31	17	21	27	36	26	310	
Broncho-pneumonia.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	1	..	..	..	..	..	..	..	..	..	1	2	83
	C	15	9	1	7	23	12	3	3	2	4	1	1	81	
Chicken-pox	A	..	..	..	..	2	..	..	..	1	1	3	3	10	
	B	..	..	..	..	..	..	..	..	..	..	1	2	3	34
	C	2	2	..	4	..	..	3	2	1	3	2	2	21	
Diphtheria	A	1	1	..	1	1	..	..	..	..	..	..	2	6	
	B	..	2	..	..	..	3	..	1	2	..	..	2	10	24
	C	2	..	..	..	..	2	2	..	..	..	1	1	8	
Dysentery (bacillary & amœbic).	A	2	4	9	3	3	..	..	..	1	1	1	1	25	
	B	4	6	12	18	4	3	2	2	1	1	4	..	57	917
	C	85	121	117	227	35	18	38	72	15	53	28	26	835	
Enteric fever	A	..	1	..	1	..	..	1	..	..	2	1	..	6	
	B	..	..	4	1	..	1	..	..	..	..	..	1	7	109
	C	7	4	1	15	11	16	8	4	3	16	7	4	96	
Epidemic dropsy	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	5	7	..	3	..	..	..	..	..	..	..	..	15	15
	C	..	..	..	..	..	..	..	..	..	..	..	..	..	
Infantile paralysis	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	C	..	..	..	..	..	..	..	..	..	..	..	..	..	
Influenza	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	..	..	..	..	..	..	..	..	..	..	..	..	517
	C	82	20	4	10	47	61	65	52	22	70	33	51	517	
Leprosy	A	..	..	..	..	..	..	..	..	..	..	1	..	1	
	B	1	..	5	..	..	..	..	2	..	2	3	1	14	60
	C	11	6	6	3	..	1	8	1	..	6	1	2	45	
Measles	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	C	..	..	..	..	..	..	..	..	..	..	..	..	..	
Puerperal fever	A	..	..	1	..	..	..	..	..	..	..	..	..	1	
	B	..	..	..	..	..	..	..	..	..	..	..	..	..	7
	C	..	..	..	2	..	..	1	2	..	..	..	1	6	
Scabies	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	..	..	..	..	..	..	..	..	..	..	..	..	1,529
	C	259	229	33	84	112	49	117	135	112	149	150	100	1,529	
Scarlet fever	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	C	..	..	..	..	..	..	..	..	..	..	..	..	..	
Trachoma	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	..	..	..	..	..	..	..	..	..	..	..	..	164
	C	12	15	1	30	21	7	14	19	12	16	9	8	164	
Tuberculosis pulmonary.	A	1	..	1	1	..	..	2	..	..	..	1	..	6	
	B	1	4	1	1	..	..	1	..	..	..	1	2	11	216
	C	17	17	9	22	16	15	23	13	19	18	22	8	199	
Tuberculosis, other forms.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	..	..	..	..	..	..	..	..	..	..	..	..	22
	C	5	1	1	3	1	1	4	2	1	2	1	..	22	
Undulant fever	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	C	..	..	..	..	..	..	..	..	..	..	..	..	..	
Venereal disease	A	1	1	..	..	..	1	1	..	..	4	1	7	16	
	B	..	..	..	1	1	2	..	..	..	1	1	2	8	120
	C	5	6	6	5	1	6	5	9	6	16	19	12	96	
Yaws	A	..	..	..	..	..	..	..	..	..	..	..	..	..	
	B	..	..	..	..	..	3	..	..	..	..	5	5	13	2,612
	C	323	503	425	154	216	80	164	132	102	194	186	120	2,599	
Totals ..	..	855	967	670	663	540	349	493	468	321	591	524	397	6,838	6,838

REPORT BY DR. T. CLUNIE, MEDICAL SUPERINTENDENT, COLONIAL WAR MEMORIAL HOSPITAL.

Staff.—The Hon. Dr. A. H. B. Pearce, Director of Medical Services, is consulting Medical Officer to the Hospital. The Medical Superintendent is also Physician and Surgeon. The Assistant Medical Superintendent is Medical Officer in Charge of the Out-patient Department, is the Radiologist, and has charge of a native medical ward. Dr. C. H. B. Thompson is Consulting Ophthalmic Surgeon to the Hospital. The Dispenser, who is a graduate of the Native Medical School, Suva, is also Anæsthetist. This office was ably filled by Native Medical Practitioner Filikesa Ramaqa. Indian Medical Practitioner Samson Deoki, a graduate of the Medical School, acted as Assistant Practitioner in the Out-patient Department.

Dr. D. C. M. Macpherson was Acting Assistant Medical Superintendent from March 6th to April 10th, and from 6th June to 6th August, and Assistant Medical Superintendent from August 7th to November 18th, when he was transferred to the Bacteriological Department. From 19th February he was also Acting Tutor, Central Medical School.

Dr. R. W. D. Maxwell was Assistant Medical Superintendent from January 1st to March 5th, whence he proceeded to Ra. He was Assistant Medical Superintendent from April 11th to June 5th, and resumed duty as Assistant Medical Superintendent on November 23rd.

Nursing Staff.—This consists of the Matron, Assistant Matron, four Graduate Staff Nurses, and one Native Obstetric Staff Nurse. There are 13 European probationers and 20 Native Obstetric Nurse pupils. The European nurses are trained for a qualification which entitles them to practice the profession of nursing throughout the British Empire, the Natives for a local qualification.

Post Graduate Nursing Courses.—The Assistant Matron was granted six months leave for the purpose of taking a post-graduate course in hospital administration in New Zealand.

Office Staff.—The European Clerk and Steward is assisted by a native clerk who is also telephone switchboard operator.

Medical Students.—The third and final year students of the Central Native Medical School act as dressers and male nurses. In addition they take periods of training in the Dispensary, Eye Department, and Post-Mortem theatre. Their training is essentially practical.

Post-Graduate Courses.—Native Medical Practitioners who have been over five years in practice, or specially selected practitioners, may take these courses, which extend to six months or longer and during which the graduates act as House Surgeons, House Physicians and Casualty Officers. They also attend lectures and clinics at the Medical School and Hospital.

These refresher courses are of value in maintaining a high standard of efficiency in the Native Medical Practitioner services. Graduates from all the British South Pacific Groups which participate in the Central Medical School organisation may take the course.

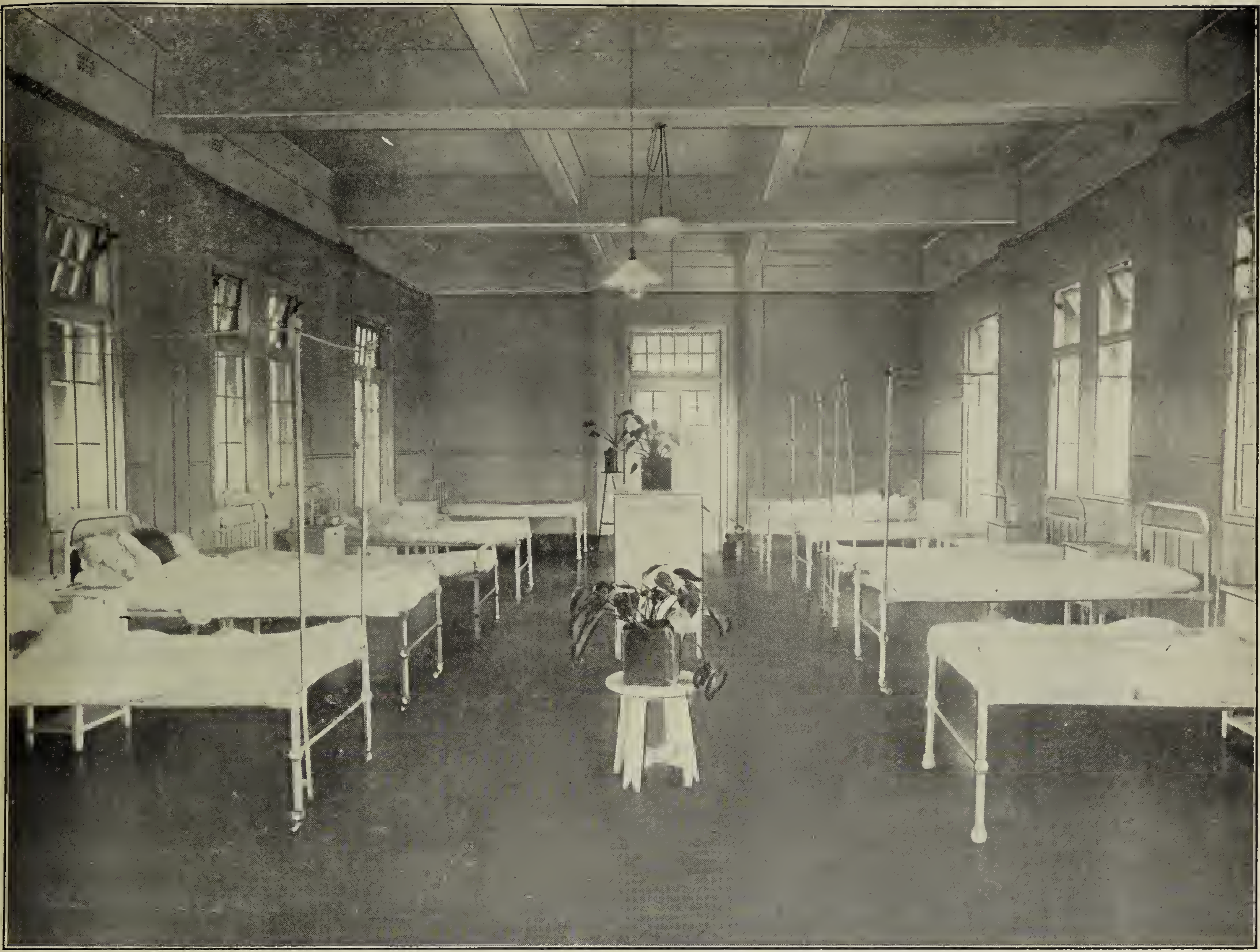
The following Native Medical Practitioners took the course during the year:—

N.M.P. Simioni Nadakuitavuki (Fiji) from October, 1934, to 6th April, 1935;
I.M.P James Ram Prasad (Fiji Indian) from January, 1935, to May, 1935;
N.M.P. Jone Fatiaki Marafu (Rotuma) from April, 1935, to August, 1935;
N.M.P. Jone Vunibokoi (Fiji) from August, 1935, to January, 1936;
N.M.P. Tutu Tekeanene (Gilbert and Ellice) from November 16th, 1935, and still on.

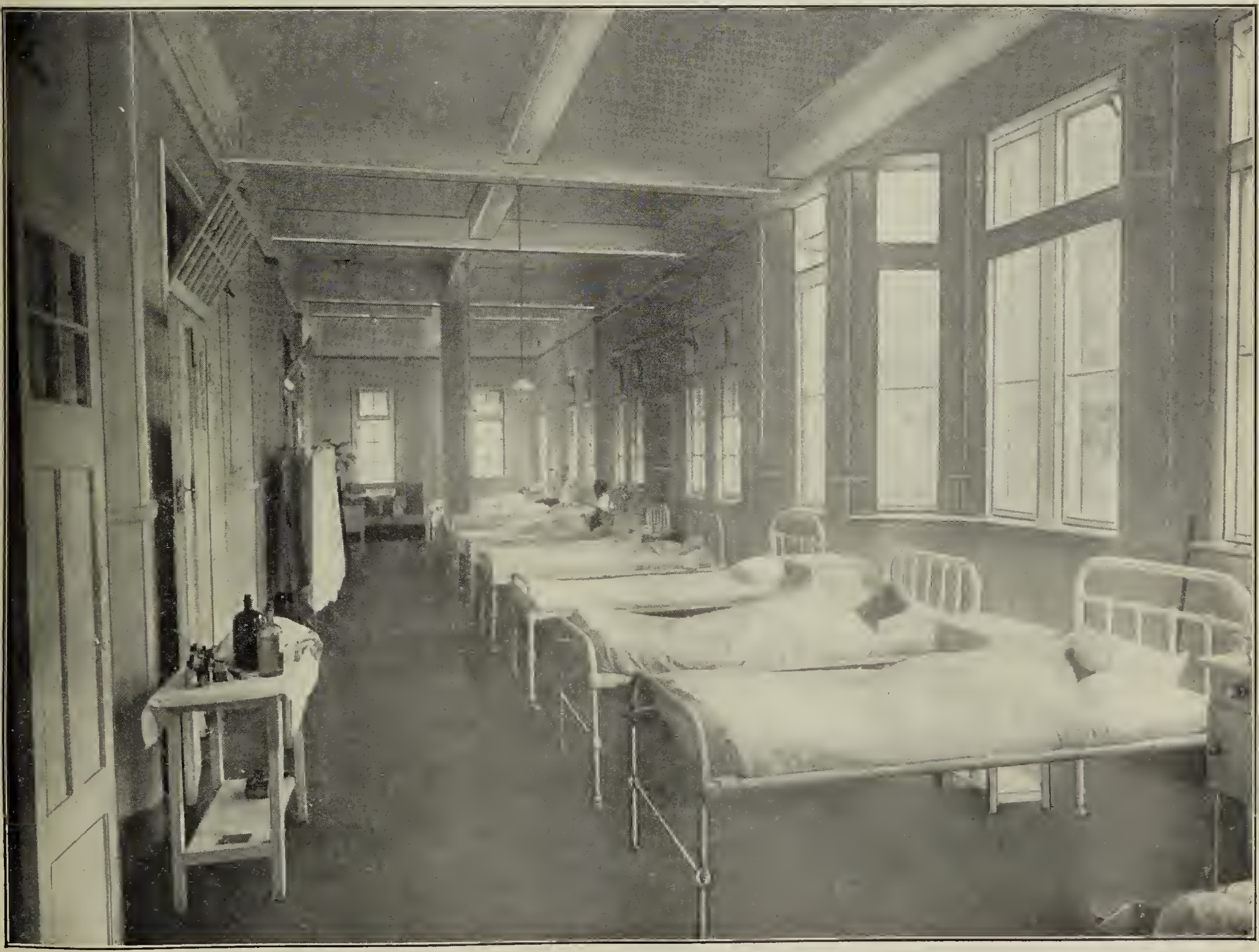
Co-operation between School and Hospital.—The Medical Superintendent was responsible for this. The Medical Superintendent carried out the administrative duties of the Tutor until February 19th, when Dr. D. C. M. Macpherson become Acting Tutor. Dr. D. W. Hoodless resumed duty as Tutor on August 7th, following long leave.

Teaching Staff.—The following was the list of lectures and demonstrators in connection with the training of the senior students of the Central Medical School, of European Nurses and of Native Obstetric Nurses:—

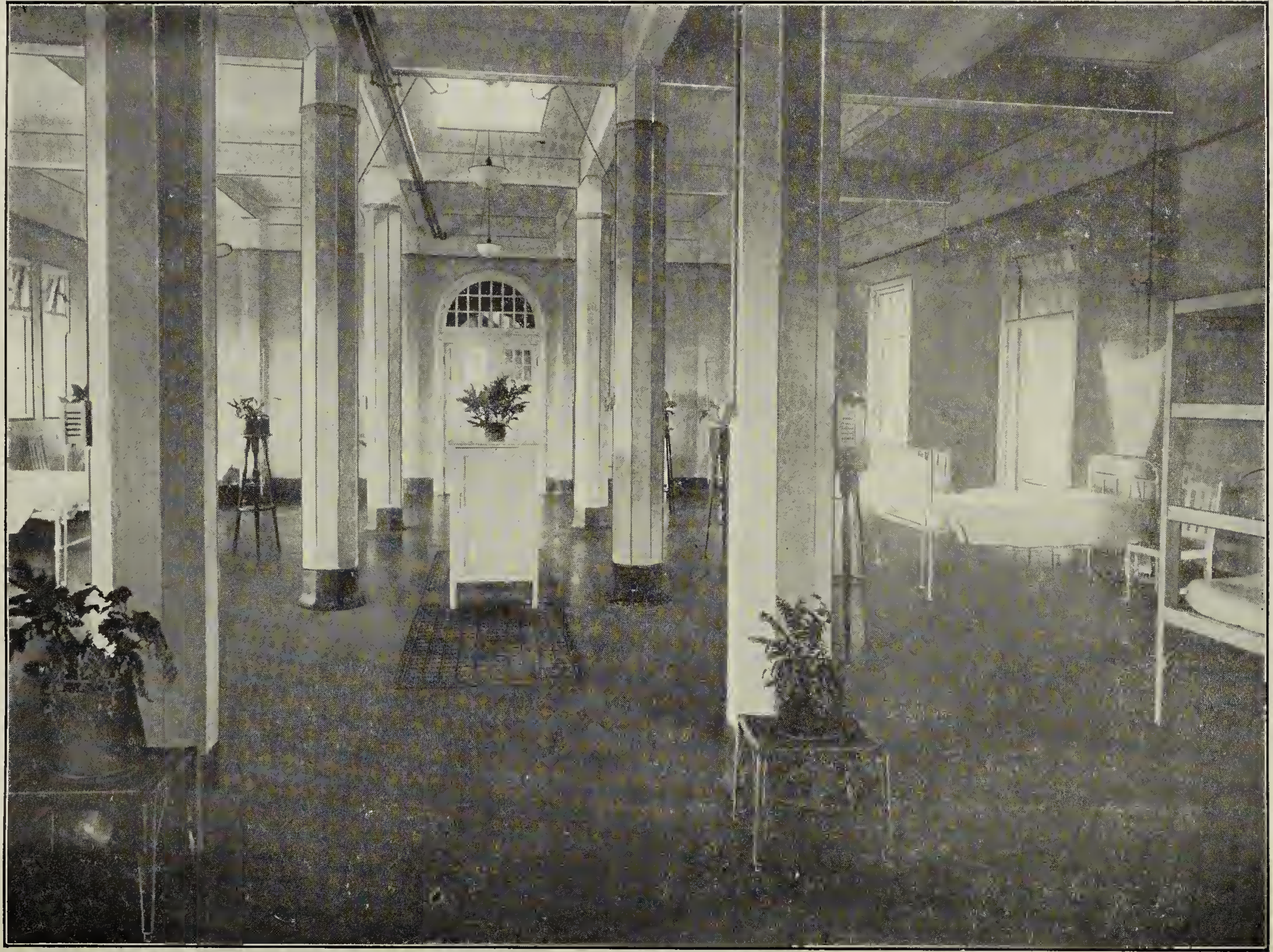
Anatomy and Physiology for Nurses	Dr. D. C. M. Macpherson.
Obstetrics for Students	The Chief Medical Officer.
Diseases of Children	Dr. W. M. Ramsay.
Surgery, Systematic and Clinical	The Medical Superintendent.
Medical and Surgical Nursing	Do.
Clinical Obstetrics	Do.
Medicine, Systematic and Clinical	Assistant Medical Superintendent.
Hygiene and *Materia Medica* for Nurses	Do.
Public Health	Dr. S. M. Lambert, Rockefeller Foundation and Dr. D. C. M. Macpherson.
Anæsthetics	Dr. I. H. Beattie and the Hospital Anæsthetist.
Dentistry	Dr. Hart.
General Nursing	The Matron.
Obstetrics for Native Nurses	The Obstetric Sister.
Ophthalmology	Dr. C. H. B. Thompson.
Bacteriology	The Government Bacteriologist.
Materia Medica	Mr. Palmer, the Government Pharmacist, and the Hospital Dispenser.
Hospital Accountancy	The Clerk and Steward.



NATIVE WOMEN'S WARD—COLONIAL WAR MEMORIAL HOSPITAL.



NATIVE MALE SURGICAL WARD—COLONIAL WAR MEMORIAL HOSPITAL.



MALE EUROPEAN WARD—COLONIAL WAR MEMORIAL HOSPITAL.

Anæsthetics.—The Dispenser carried out the duty of Hospital Anæsthetist. Dr. I. H. Beattie continued his keen interest in the theoretical and practical training of medical students.

The following is the list of anæthetics used:—

General (chloroform and ether and ethyl chloride and ether)	597
Local	278
Spinal	84
Evipan	43
Rectal	1
Total	1,003

Pathological and Bacteriological Laboratories.—The work was commenced on the new Pathological and Bacteriological Laboratories during the year. These laboratories will be under the direction of Dr. D. C. M. Macpherson and will include a modern post mortem theatre. The facilities will thus be established for the better training of students in fundamentals of disease with special reference to disease of tropical lands.

X-Ray Department.—The new X-Ray plant, so generously donated by Sir Henry Marks, has been of great help in the diagnosis of difficult or obscure cases. Several genito-urinary lesions were discovered through the use of intravenous pyelography. The Department was in charge of Dr. D. C. M. Macpherson and Dr. R. W. D. Maxwell during the year. Mr. F. A. Taylor has rendered satisfactory service as Technician. A report on the Department is attached.

Clinical Photographs.—I am indebted to the Radiologist and to Mr. F. A. Taylor for the satisfactory results attained in this subject despite the poor equipment at their disposal.

Ante-natal Clinics.—Attendances during the year:—

		No. of visits.
Indians,	7	20
Fijians,	5	5
Chinese,	1	2
Tongans	1	1

This table is an interesting commentary in the apathy of Natives towards any innovation which does not bring immediate spectacular results, and on the ability of Indians to realise the importance of any measure directed towards the welfare of mother and child.

Routine Examinations.—Routine examinations were carried out throughout the year on stools from hospital patients by the Bacteriological Department. Apart from the importance of treatment of cases such a routine method should, in time, provide a useful incidence map for the use of health authorities.

Total number of specimens examined, 1,703.

Parasites.—	*Per cent. infected.*
Hookworm	20·7
Ascaris	5
Trichuris	7·2
Oxyuris	2·5
Trichostrongylus	1·1
Hym. nana	0·1

Beds and Cots.—Beds, 142; cots in the Hospital, 23; cots in the Orphanage, 5.

Eye Department.—I attach Dr. C. H. B. Thompson's report. The students realising the importance of eye work in the tropics appear to take a keen interest in the work. Six beds are available for males and two or four according to available accommodation for females. A self-contained Eye Department with wards, Out-patient Department and theatre, would be an asset to the Colony, both for immediate treatment of cases and for the training of medical students and practitioners in an important branch of Tropical Medicine and Surgery.

Obstetric Ward.—Sisters Rial and Retemeyer assisted by other double-certificated Sisters carried out excellent work in this ward. Cases for 1935 total 197. Total number of babies born, 200. Races of mothers:—Fijians, 90; Indians, 65; Half-caste, Fijians 25; Half-caste Indians, 1; New Hebridean, 1; Samoans, 4; Rotumans, 2; Gilbertese, 2; Tongans, 2; Wallis Islanders, 2; Solomon Islanders, 1; Half-caste Gilbertese 2.

Operative Procedures.—Cæsarean sections, 2; craniotomy, 2; instrumental delivery 4; manual removal of placenta, 4; perineal tears, 28; episiotomy, 1; three sets of twins; post partum, 6; anti-partum, 1; blue asphyxia—three cases all resuscitated but one very feeble infant died six hours after birth; white asphyxia, 1, died 20 minutes after birth.

The available staff does not allow of a whole-time Obstetric Sister. The Obstetric Sister takes duty in surgical and medical wards and is assisted or relieved by other double-certificated Sisters whose main tour of duty is in the surgical and medical wards. The fact that no cross infection has occurred is probably to be attributed to the care and high standard of obstetrical technique of Sisters concerned.

Out-patients.—The attendances at the Out-patient Department during 1934 and 1935 were:

	1934.	1935.
Europeans	1,220	1,609
Fijians	6,071	6,720
Indians	9,697	4,927
Others	2,947	1,305
Total	19,935	14,561

Falling off in the number of Indian attendances in the Out-patient Department is attributed to the new regulations whereby all Indians except paupers are required to pay 1s. for treatment.

In-patients.—

	1934.	1935.
Europeans	373	425
Fijians	693	834
Indians	984	1,058
Others	349	396
Total	2,399	2,713

Disease.—A list of the diseases treated is attached.

Surgical Procedures.—Surgical procedures in operating theatre, out-patient theatre, and wards totalled 3,202. A list of operations is attached.

Medical and Surgical Wards.—These had a busy and successful year. These wards are too small, many patients have to be discharged before they were actually really fit to leave the hospital, while many were refused admission.

Board of Visitors.—The Board regularly visited the Hospital.

Appreciation.—The nursing staff and students have rendered loyal and devoted service throughout the year.

REPORT BY DR. R. W. D. MAXWELL, ASSISTANT MEDICAL SUPERINTENDENT, ON THE X-RAY DEPARTMENT AT THE COLONIAL WAR MEMORIAL HOSPITAL.

I HAVE the honour to submit the following report on the X-ray Department, Colonial War Memorial Hospital, for the year ending 31st December, 1935.

2. No unusual features have presented themselves in the year's work, although a large variety of cases has been dealt with. With the installation of the new plant a little over two years ago, the Hospital acquired a complete modern X-ray equipment which enables us to deal with all types of cases, and the increasing number of patients examined over this period has to some extent been an indication of the improved standard of work attainable.

3. During 1935 the total number of patients examined was 989, and among these 1,488 radiographs were taken and 176 screen examinations made. The following table shows the details of the regions examined:—

Bones and joints	479
Skulls	75
Dental radiography	136
Abdominal Viscera (excluding special methods as below)	92
Barium meals	125
Barium enemata	11
Cholecystography	33
Intravenous pyelography	18

4. Although we are in a fortunate position as regards facilities for examination of patients who can be brought to the X-ray Department, difficulties are still encountered from time to time in those cases where the patient cannot be moved from his bed. For example, in fractures of the lower extremity treated with traction apparatus the control of treatment by periodic X-rays is of importance, and yet it is often essential that splints, &c., should not be disturbed. It is in these cases that a portable unit would be of great value. A proposal to mount the various components of our old plant on trolleys so that it could be used in the wards was considered, but it was found that the resulting apparatus would have been too cumbersome.

5. The work of the Department is at present restricted entirely to X-ray diagnosis as no facilities for X-ray or Radium therapy are available.

6. Mr. F. A. Taylor has continued to act as X-ray Technician throughout the year and his work has given every satisfaction.

REPORT BY DR. D. C. M. MACPHERSON, GOVERNMENT BACTERIOLOGIST, ON THE WORK OF THE BACTERIOLOGICAL LABORATORY.

I HAVE the honour to submit the annual report on the work of the Bacteriological Laboratory for the year ending 31st December, 1935. Owing to the fact that I have been in charge of the laboratory for only a few weeks, the report must necessarily be briefer than in former years.

2. The number of routine specimens received and examined during the year was 4,942, a slight increase over the total for the previous year. All the T.A.B. vaccine required for immunisation purposes in the Colony was prepared in the Laboratory.

3. Mr. J. G. Campbell, B.Sc., Dip. Bact. (Lond.), the Government Bacteriologist, proceeded on vacation leave on 19th November prior to retirement on pension from the Fiji Medical Department. Mr. Campbell had been Government Bacteriologist since 1932, having previously held the combined posts of Bacteriologist and Mycologist. Despite very inadequate laboratory accommodation and equipment, Mr. Campbell extended the range of work carried out over a wide field of Bacteriology, Biochemistry, Parasitology and Chemical Pathology. He carried out a particularly valuable and interesting series of investigations into the bacteriological content of the Suva water supply, the results being published in the Annual Medical and Health Report for 1931.

4. It has been proposed that all Pathological and Bacteriological work in the Colony should in future be carried out by a Pathological Division of the Medical Department, under the supervision of a medical officer possessing the requisite additional post-graduate training and experience in the laboratory branches of medicine, and who is thoroughly familiar with the clinical and public health applications of laboratory results. Dr. D. C. M. MacPherson was accordingly transferred from another Colony to the Fiji Medical Staff in February, 1935, and since the departure of Mr. Campbell has acted as officer in charge of this Division.

5. The appointment of a properly trained European Technician to the Division has been approved by the Secretary of State for the Colonies, and the assistance of the Director-General of Health for New Zealand was sought in the selection of a suitable candidate. Mr. E. Pery-Johnston, who has been a member of the staff in the Departments of Pathology and Bacteriology of the Otago Medical School at Dunedin during the past six years was selected and will commence his duties in January, 1936. Mr. Johnston is in possession of the Diploma in Bacteriology and Pathology of the University of New Zealand.

6. *New Laboratories.*—Mention was made in the previous annual report of the munificent gift of the sum of £2,200 by the Trustees of the Rockefeller Foundation towards the erection and equipment of a new suite of laboratories. As the original sum was found to be insufficient for the purpose, the gift was further supplemented by an additional grant of £1,500 by the Foundation, and £2,000 from the public funds of the Colony. Revised plans for a larger and completely modern building were accordingly prepared, and good progress has been made with its erection. The site chosen is behind the buildings of the Central Medical School with a frontage to Amy Street, and the building is of ferro-concrete throughout, thus ensuring coolness, cleanliness, durability and freedom from fire hazards. It is expected that the building may be ready for occupation in June, 1936. The Colony will thus possess thoroughly modern laboratories capable of undertaking all routine bacteriological, pathological and biochemical investigations, and affording facilities for the practical training of Native Medical Students and post-graduates. In time it is hoped also to undertake researches into some of the many medical problems still requiring solution in the South Pacific.

WORK OF THE BACTERIOLOGICAL LABORATORY FOR 1935.

Fæces—	
Bacteriological (dysentery, enteric, and food-poisoning)	835
Ova	1,703
Chemical, occult blood	3
Blood—	
Agglutination, for enteric	72
Cultures	55
Chemical, sugar	22
Chemical, calcium	2
Compatibility tests	72
Blood counts	40
Kahn tests	257
Pus, for gonococci	154
Throat swabs, for diphtheria and/or streptococci	353
Urines (bacteriological, microscopical, and chemical)	137
Sputa, for tubercle bacilli	187
Autogenous vaccines	15
Cerebro-spinal and other fluids	17
Pathological	24
Medico-legal, determination of blood stains	3
Waters	37
Milks, bacterial counts	16
Rats examined for B. Pestis	457
Miscellaneous bacteriological and clinical pathological specimens not included above	481
Total	4,942

REPORT BY DR. D. W. HOODLESS ON THE CENTRAL MEDICAL SCHOOL, SUVA.

Students.—During the year there were 40 students in residence at the two dormitories. The following table shows the race of the different students in each year:—

	1st year.	2nd year.	3rd year.	4th year.	Post-graduates.	Total.
Western Samoa	3	.	.	1	.	4
Eastern Samoa	1	.	.	.	.	1
Tonga	1	.	1	2	.	4
Gilbert and Ellice Islands	1	.	1	2	1	5
Solomon Islands	1	1	1	1	.	4
New Hebrides	.	1	.	.	.	1
Nauru	1	.	.	.	.	1
Cook Islands	2	.	.	1	.	3
Fiji—Fijians	4	.	5	5	1	15
Rotumans	.	.	2	.	.	2
Indians	1	.	1	.	.	2
	15	2	11	12	2	42

The two post-graduates in the above list are qualified Native Medical Practitioners, and do not reside in the students' dormitories. The 12 Fijian students who reside in the smaller dormitory are required to keep their rooms and grounds in good order. The remaining 28 students who live in the large dormitory are expected to keep their own bedroom tidy and clean, but an Indian servant is provided to assist in the general management of the other rooms and the surrounding grounds. The students' dining-room is in the large dormitory so that during the continuous rainy weather which lasted for about six months during 1935 the Fijian students were put to great inconvenience as the two dormitories are about a quarter of a mile apart.

2. *Course of Studies.*—The students are divided into two groups, juniors and seniors. The junior course covers one and a half years, and the senior course two and a half years. During the first half year the junior students receive instruction in Chemistry, Physics, and Biology; and during the remaining twelve months of the junior course, instruction in Anatomy and Physiology. Owing to the temporary arrangements made during the first half of 1935 the above scheme of instruction was slightly changed, and lectures in the three preliminary subjects were continued into the third and fourth quarters. The regular course of lectures and practical work in Anatomy and Physiology was commenced during August and continued up to December 18th, so that by the end of the year the usual routine was being again followed. Strictly speaking, the junior students are not required to do any clinical duty, but in actual practice one or two of them volunteer every afternoon for relieving duty in the out-patients' department while the senior students are at lectures, and again during the Christmas and mid-year holidays all the junior students put in four weeks of relieving duty in the hospital so that the senior students may take their own holidays. The senior students are on duty in the hospital from 8 a.m. to 1 p.m. each day, and their lectures are given to them in the afternoons and evenings by the members of the honorary staff. The four chief subjects are Medicine, Surgery, Obstetrics, and Public Health, and shorter courses of instruction are given in Materia Medica, Anæsthetics, Diseases of the Eye, Diseases of Children, Dentistry, and Bacteriology.

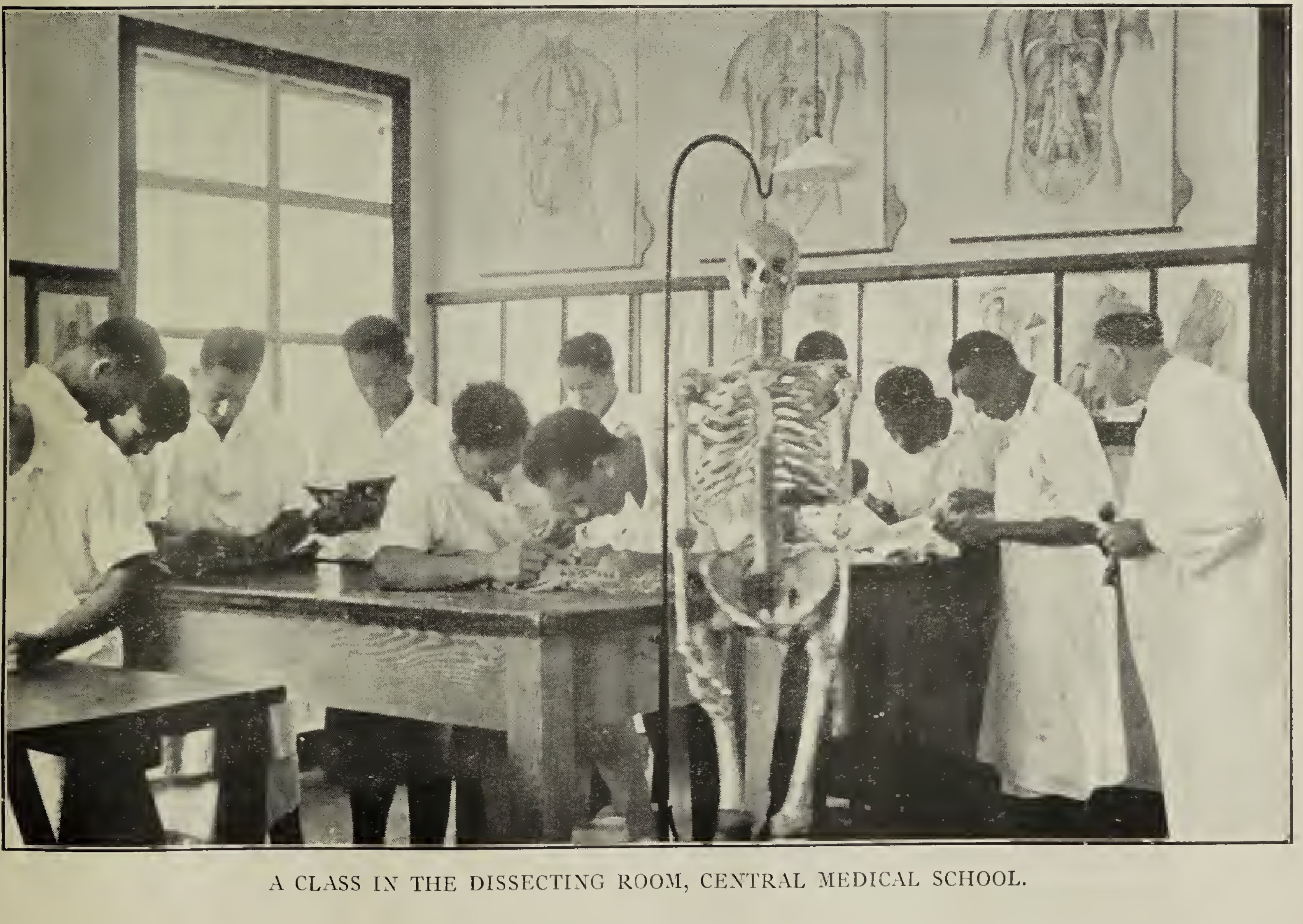
3. *Examinations during* 1935.—The usual final examinations were held during the period from December 7th to December 23rd, 1935. Out of the twelve students in the fourth year eight of them passed the qualifying examinations in all subjects, and were granted their certificates as qualified Native Medical Practitioners. Of the remaining four students, all Fijians, two failed in one subject only (Public Health), and the other two failed completely. These latter two students have now been given employment in auxiliary medical work, and the two students who failed in one subject only were allowed to re-take that subject early in January, 1936, and were successful.

Third-year Students.—The various class examinations were given to those students throughout the year with the exception of those in Medicine, in which subject it was not possible to arrange for a complete course of lectures.

Second-year Students.—There were only two students in this year, and as neither of them had completed the course in Anatomy and Physiology these two students were allowed to continue with the junior students, and they will continue so to do until the next qualifying examination in Anatomy and Physiology which will be held in June, 1936.

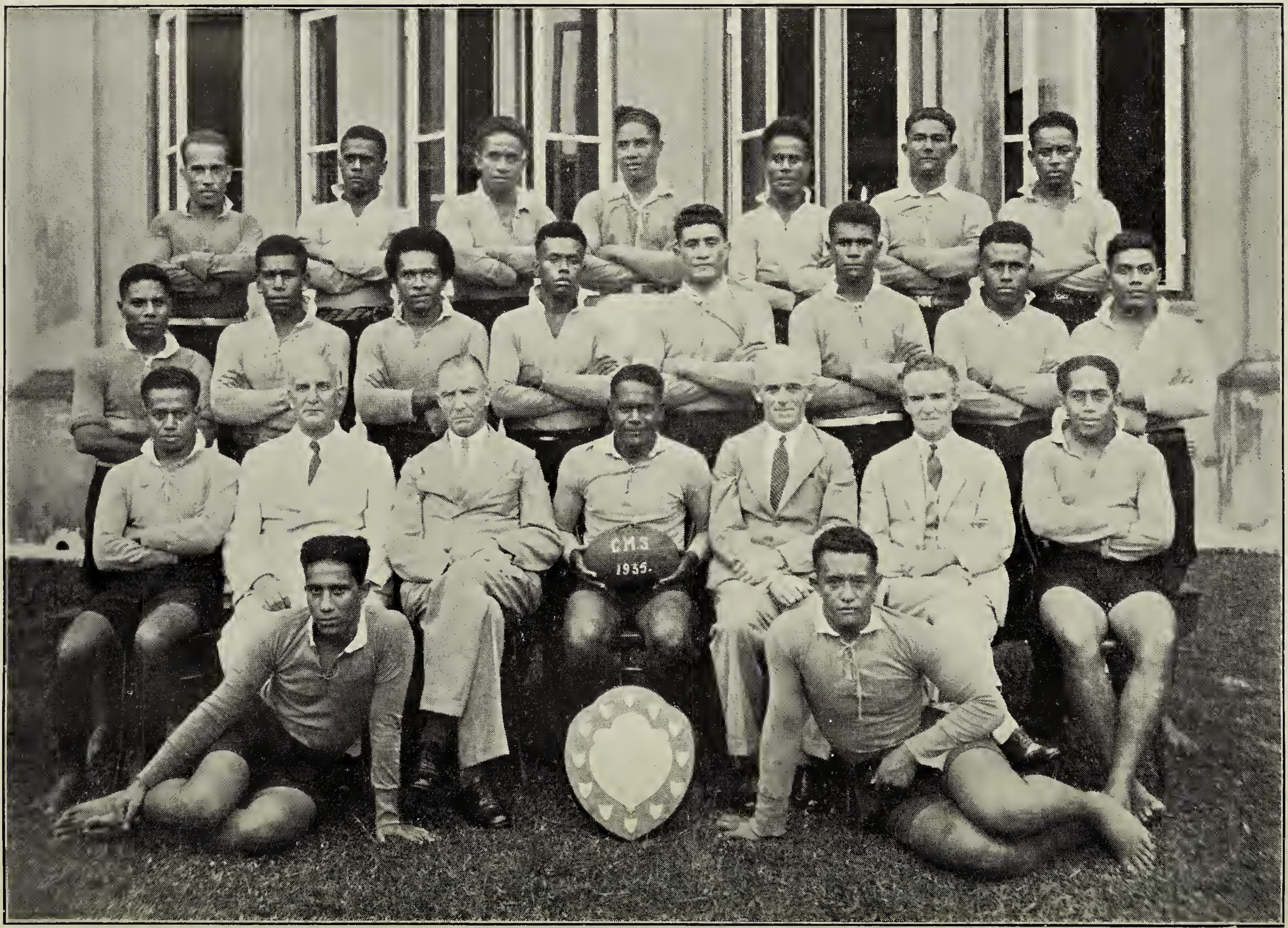
First-year Students.—All the fifteen students in the first year qualified in Chemistry Physics and Biology before the end of the school year, repeat examinations being required in four cases only. At the December quarterly examinations in Anatomy and Physiology for these same fifteen students four of them failed to obtain a satisfactory standard, and special reports were sent to the various Administrations concerned.

A CLASS OF NATIVE MEDICAL STUDENTS IN THE PHYSIOLOGICAL LABORATORY.



A CLASS IN THE DISSECTING ROOM, CENTRAL MEDICAL SCHOOL.

CENTRAL MEDICAL SCHOOL RUGBY FOOTBALL CLUB.
Premiers Costello's Shield Competition, 1935.
Matches played, 12; won, 10; drawn, 1; lost, 1; Points: for, 127; against, 58.



Back row : H. Wheatley, A. R. Qadriu, I. L. Fonua, A. T. Williams, P. Vuidreketi, M. Kuresa, W. T. Mocevakaca.
Middle row : S. Ka, I. K. Sauroutu, S. T. Baravilala, L. Volavola, R. Viliamu (Vice-Capt.), U. S. Naqasima, R. Seniloli, I. Kea.
Front row : M. E. Salato, Dr. D. W. Hoodless (Sec.), Dr. A. H. B. Pearce (Pres.), S. W. Ralawa (Capt.), Mr. J. R. Baird (Coach), Dr. T. Clunie (Vice-Pres.), J. Niumeitolu. *In front :* A. M. Erasito, U. F. Toelupe. *Absent :* V. Tailasa.

4. *Class Prizes and Medals.*—

Sir Maynard Hedstrom's gold medal in Public Health has been awarded for 1935 to Macu Esika Salato (Fijian).

The Hon. Alport Barker's gold medal in Medicine has been awarded for 1935 to Macu Esika Salato (Fijian).

The B.M.A. (Fiji branch) gold medal in Surgery has been awarded for 1935 to Jiaoji Niumeitolu (Tongan).

The Hon. Dr. A. H. B. Pearce's gold medal in Obstetrics has been awarded for 1935 to Macu Esika Salato (Fijian).

Sir Henry Scott's gold medal in Anatomy was not awarded during 1935 as no qualifying examination in Anatomy was held.

The list of class prize-winners is as follows:—

First Year.

Chemistry	Tere Williams (Cook Is.)
Physics	Alapati T. Williams (Samoa).
Biology	Tu Nia Rua (Cook Is.).
Anatomy	Alapati T. Williams (Samoa).
Physiology	Josateki Nawalowalo (Fiji).

Second Year.
(No examinations).

Third Year.

Surgery	Wilisoni T. Fonmoa (Rotumah).
Anæsthetics	Aisea M. Erasito (Rotumah).
Materia Medica	B. Vakatawa Tailasa (Fiji).
Diseases of Children	B. Vakatawa Tailasa (Fiji) . Gullam Ali Din (Indian).

Fourth Year.

Medicine	Macu Esika Salato (Fiji).
Surgery	Jiaoji Niumoitolu (Tonga).
Obstetrics	Macu Esika Salato (Fiji).
Diseases of Children	Iete Kea (Gilbert & Ellice).
Materia Medica	John Adam Numa (Cook Is.). S. Ma'afu Tubou (Tonga).
Public Health	Macu Esika Salato (Fiji).

5. *Lectures.*—The following list gives the names of the lecturers and the subjects taken during 1935:—

Obstetrics	Dr. A. H. B. Pearce.
Public Health and Hygiene	Dr. S. M. Lambert and Dr. D. C. M. Macpherson.
Surgery	Dr. T. Clunie.
Medicine	Dr. D. C. M. Macpherson & Dr. R. W. D. Maxwell.
Diseases of Children	Dr. W. M. Ramsay.
Diseases of the Eye	Dr. C. H. B. Thompson.
Anæsthetics	Dr. I. H. Beattie.
Dentistry	Dr. L. B. Hart.
Materia Medica	Mr. D. K. Palmer.
Anatomy and Physiology	Dr. D. W. Hoodless.
Biology	Dr. D. C. M. Macpherson.
Chemistry and Physics	Mr. W. J. Blackie.

Dr. T. Clunie continued to act as Tutor up to February 12th, when Dr. D. C. M. Macpherson was appointed as Acting Tutor in charge of the Central Medical School, and Dr. D. W. Hoodless returned from vacation leave in England and resumed duties as Tutor on August 7th, 1935.

6. *Sports.*—The members of the C.M.S. Rugby team were the winners for 1935 of the Costello Challenge Shield, winning 10 out of 12 games with a lead of 4 points over the second team (Police). This was a very pleasing success, for the Central Medical School team is unable to retain the services of its players for more than four years in succession, and very often a student player has not had enough training to get into the A team until his second or third year at the Medical School, so that we can retain his services then for only one or two years more. There are seven teams in the competition, and all the other teams can go on building up a well-organised and regular team for many years in succession. This 1935 success in Rugby could not have been achieved without the splendid coaching and training which was freely given by Mr. J. R. Baird, M.C. All the students and staff unite in giving Mr. Baird their very deepest appreciation for his services.

The sports' fund now has a good balance in hand, and ample funds are available for the purchase of the necessary materials for cricket, boxing and other sports. As time goes on it is hoped that either a gymnasium room or a suitable playing-field will be made available for the students during the half-year when Rugby is not being played. The importance of proper exercise and physical training for these native medical students cannot be too much emphasised, as their hours of duty are long, they are in constant association with disease of all kinds, and above all they are unable to obtain in Suva their regular swimming exercises in the sea which normally they would enjoy daily in their own island homes.

7. *Terms and Vacations.*—The school year is divided into four quarters. The students are given two weeks' holidays at Christmas, and again at the end of June. Half the number of students are away for two weeks, and then the other half have two weeks' holidays. There are therefore two periods of four weeks each when no lectures are given. The first quarter each year is arranged to commence on or about January 15th. During the first half of 1935 the above arrangements were slightly changed owing to the temporary staffing arrangements, but the regular routine is now again being followed. These arrangements are made with a view to facilitating the return of newly-qualified Native Medical Practitioners to distant island groups, such as the Solomon Islands, the Cook Islands or the Gilbert and Ellice Islands, and at the same time it is hoped that the entering new students will arrive in each case prior to January 15th each year. During 1935 two new students for 1936 were admitted as early as 15th November, 1935, being from the Gilbert and Ellice Islands where transport facilities are very few. The two new Tongan students for 1936 arrived on 17th December, 1935, and in every case we were able to make satisfactory temporary arrangements for their accommodation. The only students who were unable to arrive in good time before the re-opening of the Medical School were the two students from Western Samoa, who were travelling on a launch which was lost at sea between Apia and Pago Pago. Fortunately, no lives were lost owing to the timely arrival of s.s. " Hauraki," but the two students were not able to arrive until five weeks after the commencement of lectures in 1936.

In December, 1935, it was necessary to make arrangements for the return of seven newly-qualified Native Medical Practitioners to their distant homes in various parts of the South Sea Islands, and, in addition, to arrange for the arrival of no less than nine new students from similarly distant islands. All these arrangements were satisfactorily completed, but it is interesting to note that this large interchange of " distant " students will not occur again until December, 1938.

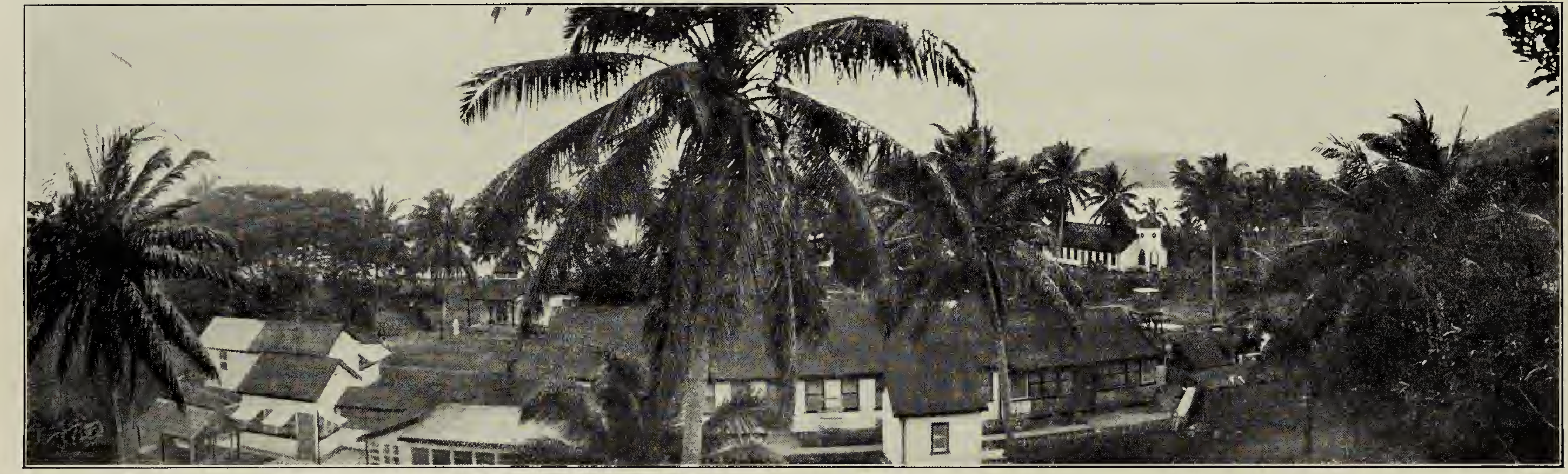
8. *Board Meetings.*—Six meetings of the Central Medical School Advisory Board were held during 1935, with the Director of Medical Services, Dr. A. H. B. Pearce, as Chairman. Mr. K. W. A. Black, Chief Clerk to the Medical Department, acted as Secretary to the Board for the first four of these meetings, and Dr. D. W. Hoodless assumed his duties again as Secretary to the Board on August 7th. The Board continued to carry out its usual routine business of recommending the award of certificates to newly-qualified Native Medical Practitioners, deciding the number of new students to be admitted from each participating Administration, selecting the new Fijian and Indian students for the year, and making suitable recommendations on lectures, courses of studies, regulations, disciplinary measures, and repairs to buildings. Dr. S. M. Lambert of the Rockefeller Foundation who has been a member of the Board since its first meeting on July 10th, 1928, attended the first four meetings during 1935, and Mr. C.W.T. Johnson acted as substitute for Dr. Lambert during the latter's absence from the Colony on vacation leave.

9. *Visitors.*—There was a record number of 125 visitors to the Central Medical School during 1935. Among the distinguished visitors were H.R.H. the Duke of Gloucester, Professor Dean Lewis (Johns Hopkins Hospital), Professor John Fraser (Edinburgh University), Miss Sheila MacDonald, Dr. Bernard Myers, the Right Hon. G. W. Forbes, Prime Minister of New Zealand, Professor Peter Buck, Professor Sydney Smith (Edinburgh), Dr. Carmichael Low (London), all the members of the official party of the British Medical Association *en route* to Melbourne, Sir Comyns Berkeley, and Lord Horder. When time permits it is our usual practice, in the case of medical visitors, to invite the visitor to select any question in Anatomy and to ask a junior student to volunteer to give a demonstration on that question on the black-board. This practice has continued to be successful during the past seven years, and the students, one and all, very sincerely appreciate the kind and friendly interest which is invariably given to them. There can be no doubt that all the students present will long remember that particular morning when Lord Horder visited the Medical School and insisted upon sitting amongst the students themselves whilst a Fijian student gave a good demonstration for about half an hour on the intricacies of the scapular region.

10. *Finance.*—During the period 1926—1928, prior to the opening of the present Central Medical School, there was lengthy consideration of various schemes for the inauguration of a new medical school. Finally, the alternative schemes were (*a*) a four-group school for 28 students at an average annual estimate of £91 per student, and (*b*) the Rockefeller Foundation seven-group school for 40 students at an average annual cost of £90 per student. The latter scheme was ultimately adopted, and it is interesting to note what the actual annual expenditure has been subsequently. Over a period of five years from 1930 to 1934 the average annual expenditure per student has been £75 11s. 10d., so that there has been an annual reduction in the total estimated expenditure of approximately £550 per annum. The following table shows the annual cost per student for 1930—1934:—

Year.	Filled studentship.	Unfilled studentship.	Contributions from Rockefeller Foundation.
1930	£35 8 5	£18 16 11	£1,650 0 0
1931	44 18 8	26 5 6	1,237 10 0
1932	54 12 4	30 15 2	825 0 0
1933	76 19 2	42 4 8	Nil.
1934	73 4 3	39 11 8	Nil.

The corresponding figures for 1935 are not yet available although they will probably be very similar to those for 1933 and 1934. When more complete arrangements have been made for the students' dining-room and laundry-room it may be stated that the average annual cost per student should be about £80, which covers board and lodgings, tuition fees, maintenance expenses, clothing, and a small pocket-money allowance of 10s. per month per student,



OVERLOOKING PART OF HOSPITAL, DALICE.

11. General.—We have continued to receive very satisfactory reports on former students who are now practising as Native Medical Practitioners in various island groups in the Western Pacific.

The year's work during 1935 has again been a successful one. Under the guidance of the Director of Medical Services, Dr. A. H. B. Pearce, and with the continued assistance of the members of the Advisory Board, the Central Medical School has now completed its first seven years, and it has been instrumental in training qualified men for the inauguration of a Native Medical Practitioner Service in five other Administrations. When the Central Medical School was opened on December 28th, 1928, it was understood that on or before the completion of the first ten years the whole scheme of co-operation should be reviewed for the consideration of any alterations that may be necessary, *e.g.*, the number of students from any particular Administration. As we are now entering on the eighth year of the School the time is approaching when consideration may be given to some of these questions, including the number of students from each Administration, dormitory accommodation, buildings, and financial arrangements.

REPORT BY Dr. C. J. AUSTIN, MEDICAL SUPERINTENDENT, CENTRAL LEPER LEPER HOSPITAL, MAKONGAI.

I HAVE the honour to submit the following report on the Central Leper Hospital, Makongai, for the year 1935.

Table I, giving the number of admissions, deaths, discharges, &c., for the year, shows the number of patients to have increased from 466 to 575. The latter figure constitutes a new record, the total of patients never previously having exceeded 500.

TABLE I.

STATISTICS FOR THE YEAR 1935—MAKONGAI CENTRAL LEPER HOSPITAL.

	European.		Half-caste.		Fijian.		Melanesian.		Indian.		Rotuman.		Chinese.		Samoan.		Maori.		Niue Islander.		Cook Islander		Tongan		Gilbert Islander.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M. F.
In the Hospital, 1/1/35.	2	1	7	4	99	43	43	5	134	43	14	11	8	.	10	5	1	.	1	2	10	16	3	4	.	.	333+133=466
Admissions	2	.	1	1	9	4	5	2	26	7	19	15	2	.	2	1	.	.	.	2	20	9	4	6	32	15	122+ 62=184
Deaths	.	.	.	1	7	3	3	2	5	3	1	.	1	.	.	..	.	.	.	.	2	.	.	.	2	.	21+ 9= 30
Uncond. discharges	.	.	.	.	1	1	.	.	.	.	3	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4+ 5= 9
Discharges	1	1	1	1	9	5	2	1	9	2	.	.	.	.	.	.	.	.	.	.	1	1	.	1	.	.	23+ 12= 35
Repatriated	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1 1
Remaining in Hospital, 31/12/35	3	.	7	3	91	38	43	4	145	45	29	22	9	.	12	6	1	.	1	4	27	24	7	9	30	15	405+170=575
Total inmates	3		10		129		47		190		51		9		18		1		5		51		16		45		575

Of the 184 admissions, only 56 were cases from Fiji. Rotuma, the Cook Islands, Tonga and Samoa have added to their numbers during the year, and a first contingent of 47 cases have been received from the Gilbert Islands. These new cases are classified according to nationality and type of leprosy in Table II.

TABLE II.

	Neural 1.	Neural 2.	Neural 3.	Cutaneous 1.	Cutaneous 2.	Cutaneous 3.	Non-Lepers.	Total.
European	..	..	..	1	1	..	..	2
Half-caste	..	..	..	..	2	..	..	2
Fijian	2	6	1	1	1	..	2	13
Indian	2	6	1	7	17	..	..	33
Solomon	1	2	..	2	2	..	..	7
Rotuman	10	17	..	..	..	..	7	34
Chinese	..	1	..	..	1	..	..	2
Cook	9	7	..	5	5	3	..	29
Samoan	..	1	..	..	1	1	..	3
Tongan	..	1	1	1	6	1	..	10
Niue	1	..	..	..	1	..	..	2
Gilbert Islands ..	9	4	4	4	17	9	..	47
Total ..	34	45	7	21	54	14	9	184

The percentage of Neural cases is interesting from the point of view of prognosis, for as previously pointed out, a much higher proportion of Neural than Cutaneous cases are discharged every year. Of the 11 Fijian cases, 81·8 per cent. are Neural, but of the Indian only 27·3 per cent. The comparative study of cases among these two races has been discussed before without any very definite conclusions being drawn. On the whole the Indians are more advanced on admission and yet react better to treatment.

One partial explanation is that the Indian hides his disease as long as possible to prevent his isolation from relatives, &c., but once brought under control he does his utmost to further the effects of treatment so that he may return to his relatives as soon as possible. Of the cases admitted from outside Fiji the Rotumans show 100 per cent. Neural, Cook Islanders 55·2 per cent., Tongans 20 per cent., Gilbert Islanders 36·2 per cent. These latter were in very poor general condition on admission and had evidently been badly neglected. Two of them died within a month of admission. The total percentage of Neural cases among the admissions was 46·7 per cent.

For the purpose of reporting progress, cases admitted within the last few months of the year have been omitted from the following tables and a total of 556 cases have been taken as the basis for report.

TABLE III.

	Neural 1.	Neural 2.	Neural 3.	Cutaneous 1.	Cutaneous 2.	Cutaneous 3.	Total.
European	1	..	1	..	1	..	3
Half-caste	..	2	..	..	11	..	13
Fijian	25	46	15	11	24	26	147
Indian	18	33	4	37	91	13	196
Solomon	11	12	4	5	14	9	55
Rotuman	16	23	..	..	9	4	52
Chinese	..	1	..	..	4	4	9
Cook Islanders ..	14	12	1	6	14	5	52
Samoan	..	4	..	..	12	1	17
Tongan	2	2	..	..	3	..	7
Niue	2	..	..	1	1	..	4
Maori..	..	..	1	..	..	..	1
Total ..	89	135	26	60	184	62	556

Table III may be studied from the same point of view as the previous one and serves to show that the tendencies shown by the 1935 admissions are not isolated phenomena. Thus the percentage of Neural cases among 196 Indians is only 28·0 as contrasted with 58·5 per cent. of 147 Fijians, 75 per cent. of 52 Rotumans, and 51·9 per cent. of 52 Cook Islanders. The total percentage of Neural cases is 45·0.

The following table showing the sex ratio in relation to type shows 71·6 per cent. male and 28·4 per cent. female; 39·4 per cent. of the males and 58·8 per cent. of the females were found to be Neural, so that, other conditions being equal, the prognosis should be better among the females.

TABLE IV.

	Neural 1.	Neural 2.	Neural 3.	Cutaneous 1.	Cutaneous 2.	Cutaneous 3.	Total.
Male	49	89	19	50	138	53	398
Female	40	46	7	10	46	9	158
Total ..	89	135	26	60	184	62	556

Treatment has proceeded along similar lines to that of previous years. General hygienic measures are regarded as of primary importance and patients are encouraged by all possible means to take up open air work and sport. Garden produce is bought for the hospital; carpentering, road-work and other occupations are paid for by the Public Works Department; prizes for cricket, football and other sports are donated. Concurrent diseases—skin conditions, parasitic and other infections—are treated, and sanitary measures are enforced. From the point of view of " specific therapy " we have yet to find any improvement on the injection of Iodised (0·5 per cent.) Chaulmoogra oil, coupled with plain Chaulmoogra oil by mouth to the limit of tolerance. Intravenous dyes have been tried without obvious benefit. There is no question, however, that injection of certain dyes (*e.g.*, Brilliant Green and Methylene Blue) into individual nodules will rapidly cause them to flatten out. Work is still proceeding on these lines and the ultimate results will be assessed with care. Table V gives the details of injections, dressings, &c. Surgery holds a very minor place in treatment and only 15 operations, mainly of a minor character, were carried out.

TABLE V.

	Dressings.	Patients Dressed.	Operations.	Manganese Butyrate.	Salvarsan.	Brilliant Green.	Methylene Blue.	Mercurochrome.	Fluorescein.	Dilesters.	Gentian Violet.	Chaulmoogra Oil.	Total of Injections.	Bacteriological Examinations.	Urine Analyses.	Helminths.	Total of Laboratory Examinations.	Insulin.	Trypan Blue.	Adrenalin.	Morphia.
January	7,506	3,294	3	1	6	1	..	..	..	15	..	1,074	1,189	63	102	6	171	92	..	..	..
February	6,128	2,816	6	9	10	2	..	..	..	44	..	1,324	1,473	24	86	13	123	84	..	..	..
March	7,276	2,992	..	18	15	..	..	..	..	53	3	1,000	1,181	73	102	6	181	92	..	..	..
April	7,380	3,384	..	15	2	..	..	6	..	26	6	1,055	1,199	32	36	23	91	89	..	..	..
May	6,902	3,264	3	10	7	..	11	11	..	17	7	1,824	1,978	30	42	19	90	91	..	..	..
June	6,987	3,315	..	2	8	..	2	..	1	25	7	1,108	1,243	56	49	23	128	90	..	..	..
July	8,622	3,816	..	13	..	..	..	..	4	9	7	1,390	1,515	8	33	23	64	92	..	..	..
August	8,370	3,834	..	21	11	..	4	..	..	4	1	1,509	1,610	38	98	18	154	60	..	..	..
September	7,866	3,618	1	6	22	..	11	..	..	13	..	1,493	1,652	38	94	6	138	62	1	40	3
October	6,624	3,240	2	10	13	..	14	12	..	33	..	1,597	1,829	51	98	6	155	74	..	72	4
November	7,684	3,434	..	13	11	..	22	6	..	27	..	1,681	1,848	62	91	34	187	73	..	14	1
December	7,704	3,600	..	..	6	..	8	2	..	3	..	769	861	20	105	..	125	64	..	8	1
Total ..	89,049	40,607	15	118	111	3	72	37	5	269	31	15,824	17,578	495	936	177	1,607	963	1	134	9

Results of treatment may be seen in Tables VI, VII and VIII in relation to type of leprosy, nationality and sex respectively.

TABLE VI.

	Neural 1.	Neural 2.	Neural 3.	Cutaneous 1.	Cutaneous 2.	Cutaneous 3.	Total.
Arrested	20	22	4	5	5	..	56
Quiescent	39	56	11	20	9	..	135
Improved	16	31	3	20	77	7	154
Stationary	14	20	5	10	69	38	156
Worse	..	4	..	5	14	4	27
Died	..	2	3	....	10	13	28
Total ..	89	135	26	60	184	62	556

Of the 56 arrested cases, 82·1 per cent. were Neural, 75 per cent. being Early or only Moderately Advanced. Of the 135 Quiescent cases (*i.e.*, those showing no sign of activity for six months or more), 78·5 per cent., and of the 345 " total improved " cases 64·3 per cent. were Neural. These results serve to emphasize once more the better prognosis in Neural cases and the fact that although Cutaneous cases improve under treatment, their chances of " cure " are much less than those of Neural cases. This is well seen in the accompanying Graph.

TABLE VII.

	Arrested.	Quiescent.	Improved.	Stationary	Worse.	Died.	Total.
European	3	..	..	..	..	..	3
Half-caste	2	1	5	3	1	1	13
Fijian	19	44	29	40	5	10	147
Indian	25	40	73	42	8	8	196
Solomon	4	13	10	17	6	5	55
Rotuman	..	20	16	14	1	1	52
Chinese	..	..	1	5	2	1	9
Cook Islanders ..	2	13	14	20	1	2	52
Samoan	..	2	2	10	3	..	17
Tongan	1	2	3	1	..	..	7
Niue	..	..	1	3	..	..	4
Maori..	..	..	..	1	..	..	1
Total ..	56	135	154	156	27	28	556

Table VII again raises the question of comparative racial results, particularly with regard to the Fijians and Indians whose totals are sufficient to bear comparison. The Fijians with their 58·5 per cent. of Neural cases have 42·9 per cent. Inactive cases, while the Indians with 28·0 per cent. Neural have 33·2 per cent. Inactive cases. The Fijian results are therefore not proportionally superior to those of the Indians and this, as already pointed out, is probably due to a psychological difference between the two races. The other Southern Pacific races are at a similar disadvantage with the Fijians.

TABLE VIII.

	Arrested.	Quiescent.	Improved.	Stationary	Worse.	Died.	Total.
Male	37	89	115	117	21	19	398
Female	19	46	39	39	6	9	158
Total ..	56	135	154	156	27	28	556

Results of treatment from the point of view of sex differences are illustrated in Table VIII. The females show 41·1 per cent. of Inactive cases as contrasted with 31·6 per cent. among the males. This may be correlated with their higher proportion of Neural cases, but is nevertheless rather surprising in view of their more restricted and less active life.

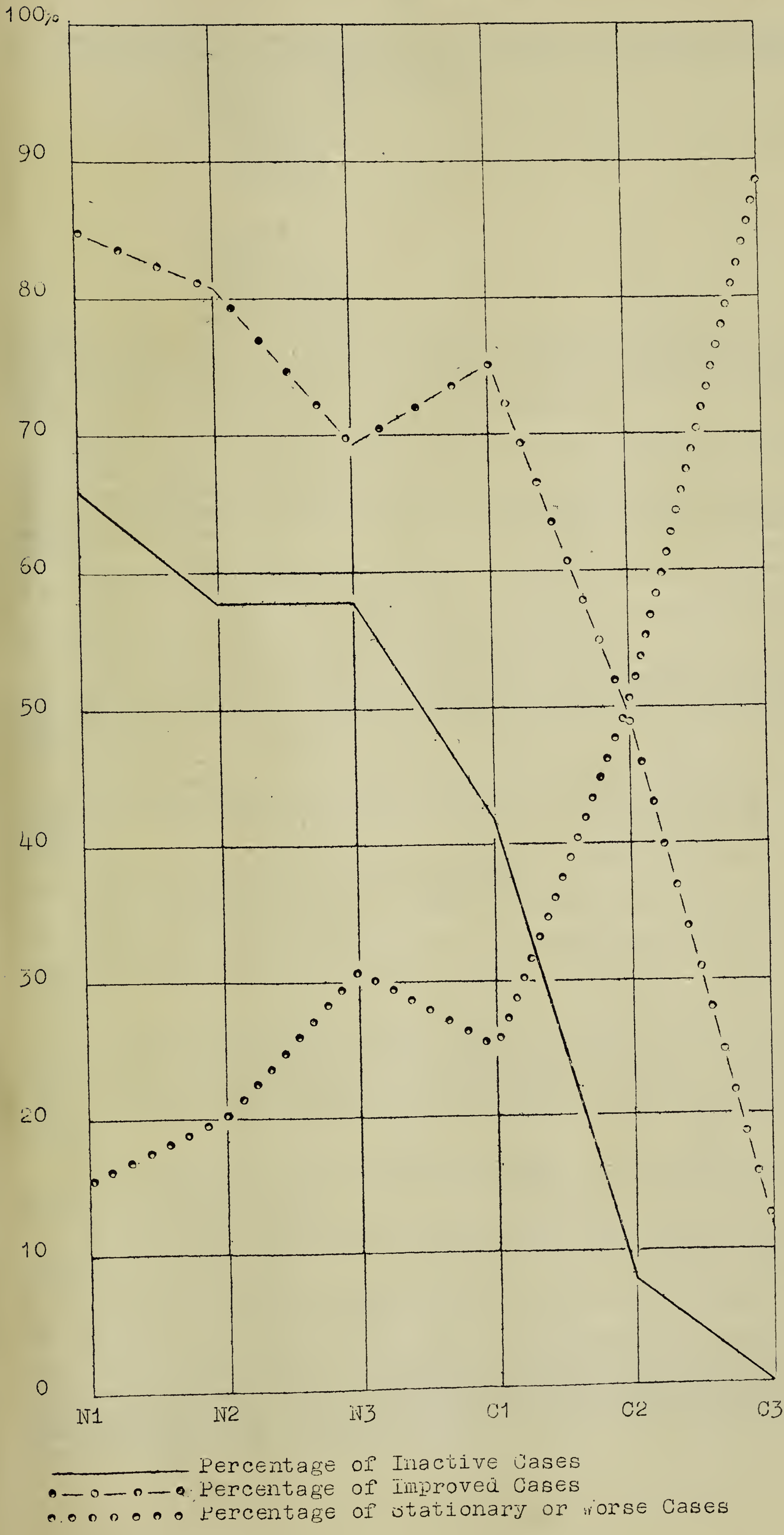
The number of cases actually discharged during the year amounted to 35, and a further ten were awaiting Board at the end of 1935.

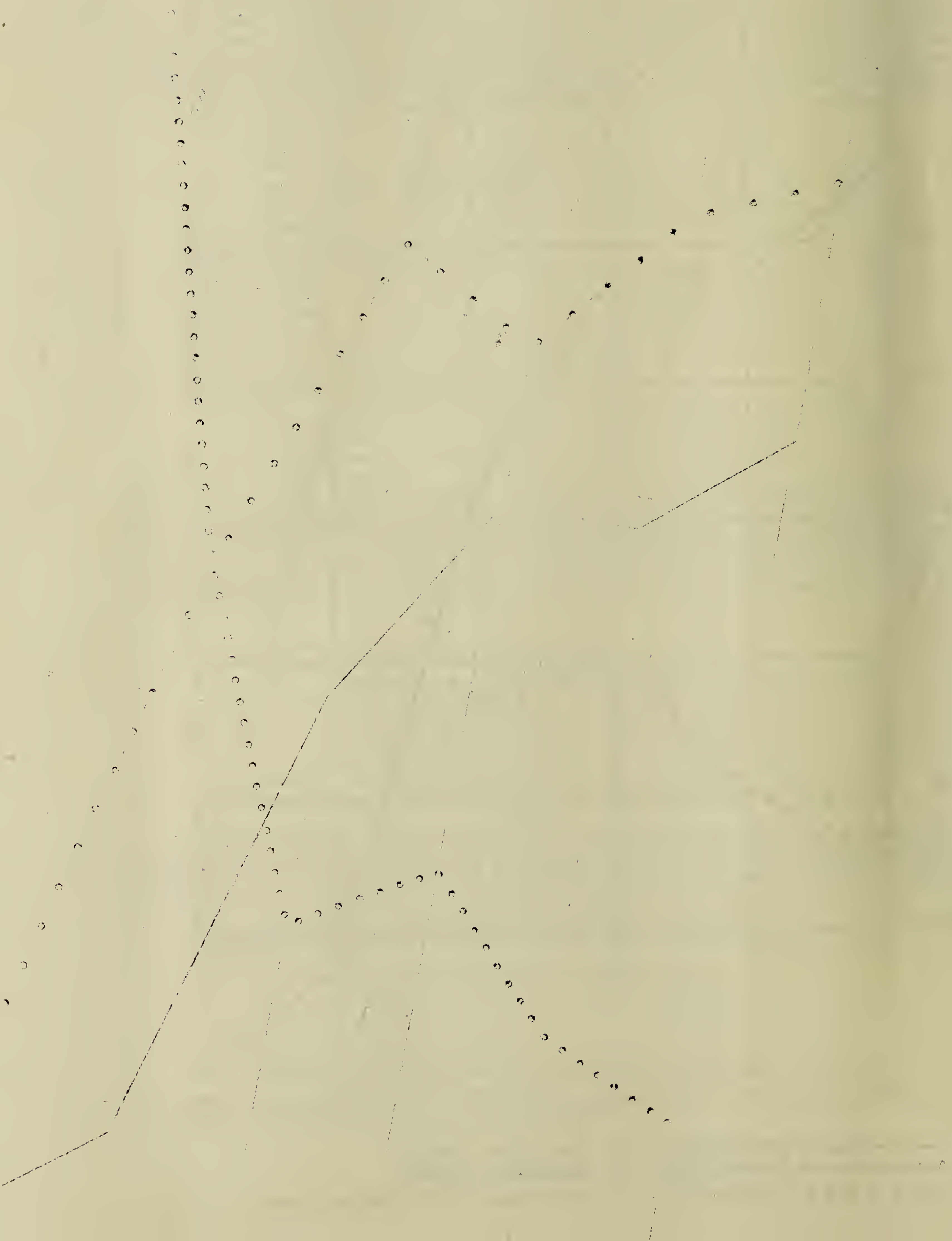
The types of cases discharged are shown in the following list:—

Neural–1	16 cases.
Neural--2	14 ,,
Cutaneous–1	2 ,,
Cutaneous–2	3 ,,

It is noteworthy that the only Cutaneous—2 cases discharged were European or Half-caste, each of whom had been under treatment for more than ten years.

ILLUSTRATED PROGRESS IN VARIOUS TYPES





Deaths numbered 30, consisting of 21 males and 9 females. They include 3 Neural–2, 3 Neural–3, 10 Cutaneous–2, and 14 Cutaneous–3, cases. Certified causes of death are as follows:—

Leprotic and " senile " exhaustion		11
Nephritis or uræmia		6
Tuberculosis—		
Pulmonary	3	
Abdominal	1	
Generalised	1	
	—	5
Cardiac failure		2
Pneumonia		2
"Amyloid disease"		2
Septic absorption		1
Cerebral thrombosis		1

Assuming deaths attributed to " exhaustion," nephritis, " amyloid " and septic absorption to be more or less directly due to leprosy, we find twenty deaths so classified and ten due to other causes, of which tuberculosis claims five, circulatory conditions three and other pulmonary conditions two cases. To find two-thirds of the deaths to be due to leprosy is only to be expected when 24 of the 30 cases are seen to be Moderately, or very Advanced Cutaneous cases.

Public Works.—The increase in numbers during the year has necessitated extensions and new buildings, particularly in the women's compound.

A new isolation ward for cases of dysentery, &c., has been a long felt want, the size of the previous one being pitifully inadequate and its position unsuitable. The present structure will accommodate fifteen cases at need, is cool and airy, and well situated from the point of view of isolation.

The main women's ward has been extended at each end by the demolition of older portions of the building and reconstruction on a larger scale.

Approval has also been given for the reconstruction of the ward for advanced cases among the women, the plans in this case also giving additional accommodation.

Other buildings under construction at the end of the year included a second dormitory for the schoolboys, rendered necessary by their growing numbers, and the rebuilding of the ward for advanced cases among the men. A number of the original hospital buildings have now reached a stage where " maintenance " is no longer economically feasible, and complete reconstruction is the only rational policy. Where possible, advantage is being taken of this necessity to add to the previous accommodation.

In the Indian village a set of six additional kitchens has been built to prevent overcrowding. Cottages in the Polynesian and Fijian villages are being given a new lease of life by being " reconditioned " throughout, and new bathrooms of a better type are replacing old and dilapidated structures.

The office of the co-operative store has been enlarged so that what was previously little more than a corridor is now converted into a light and airy room.

General maintenance and painting of buildings have proceeded as usual and the motor road from the hospital to Nasau kept in repair.

The use of patients for public works is not only, as mentioned above, good for them physically and financially, but the work can naturally be carried out more cheaply than if labour had to be imported.

Makongai Produce.—The patients are encouraged to produce native vegetables, &c., by the buying of their surplus produce for hospital use. During the year under review they received the sum of £858 18s. 7d. (no mean incentive !) for their efforts in this direction. Ducks and fowls are kept by the patients in each village and form a valuable addition to the dietary. The main fowl-yard, for the patients confined to hospital, is kept by Native Sisters under the supervision of the Reverend Mother and yielded nearly 10,000 eggs for hospital use, in addition to over 300 birds for the table.

About 70,000 loaves were prepared at the Nasau bakery, of which nearly 60,000 were issued to patients. The balance was sold to the staff at a cost of £230. The expenditure on upkeep of the bakery was approximately £850.

The Nasau herd of cattle yielded nearly 5,000 gallons of milk and nearly seven tons of beef. In addition, sales of milk and meat realised over £30 for revenue. About 250 goats were given to the Indians who do not eat beef.

Four and a half tons of soap were manufactured from coconut oil at Nasau and issued to patients, while sales of soap contributed £48 17s. 0d. Twenty and a half tons of copra were also sold, providing a further £153 for revenue.

The Chaulmoogra trees produced three pints of oil in 1934 and a gallon and a half in 1935. This is, of course, a small amount in proportion to our needs, but shows a very encouraging increase. The *Hydnocarpus anthelmintica* trees are now beginning to show fruit for the first time. They had been so tardy in comparison with the *Wightiana* variety, that it almost appeared that the locality must be unsuitable for them. This is evidently not the case, and it will now be of interest to compare the produce of the two varieties.

The patients' co-operative store has a large turnover every year. The receipts for 1935 amounted to £3,039 15s. 0d., and the expenditure £2,637 15s. 4d. The value of the stock in hand at the end of the year totalled £417 17s. 8d., and the credit cash balance was £501 11s. 10d.

The staff canteen functions on a smaller scale, receipts amounting to £1,197 3s. 5d., and expenditure to £1,023 19s. 0d. Accumulated "liquid profits" amounting to £140 3s. 1d. were distributed as follows:—90 per cent. to Makongai Comforts Fund, £126 2s. 9d.; 10 per cent. to revenue as credit against store expenses, £14 0s. 4d.

RAINFALL.

The rainfall for the year maintained a good average throughout as seen in the following monthly table:—

	Inches.		*Inches.*
January	14·12½	July	3·94½
February	4·10	August	5·96
March	9·12	September	7·21
April	4·47	October	7·99
May	2·56	November	10·54
June	2·91¾	December	8·71¼

Total, 81·65 inches.

VISITORS.

Official visitors to the island during the year included His Excellency the Hon. A. A. Wright, Officer Administering the Government; Sir M. Maxwell-Anderson, Chief Justice of Fiji; Hon. R. Thacker, Attorney-General; Hon. J. Craig, Colonial Treasurer; Hon. Dr. A. H. B. Pearce, Chief Medical Officer; Hon. Dr. McGusty, Secretary for Indian Affairs; Hon. W. Wise, Director of Public Works; Hon. H. C. Monckton, Acting Secretary for Native Affairs; and Dr. Ramsay as Acting Chief Medical Officer. Among the non-official visitors were Miss Sheila Macdonald; Mr. S. J. Smith of the Cook Islands Department, Wellington; Mr. W. Teeling of the Overseas League; His Lordship Bishop Nicolas; Archdeacon Harris; Dr. G. W. Coats of New Zealand; Dr. N. de Rook of the Netherland East Indies; and Dr. W. Giblin of Papua.

OBSERVATIONS ON FIJIAN FIRE-WALKING.

By Sir JAMES PURVES-STEWART, K.C.M.G., C.B., London, and
Professor DAVID WATERSTON, St. Andrew's University.

ON Thursday, August 29th, 1935, a performance of the ceremony of Fire-Walking was carried through at Suva by native Fijians from a neighbouring island (Mbengga) for the benefit of members of the British Medical Association who were visiting the island of Fiji on their way to Australia.

We were invited to carry out on the performers any examination we desired, in order to learn, if possible, how a performance, which might be expected to cause severe pain, is carried out without obvious painful reactions.

It is not necessary to describe here the full details of the performance which have been recounted by other observers, beyond stating that the performance which we witnessed conformed fully to the traditional routine.

On our arrival we found that, in preparation for the ceremony, a pit of some 12 to 15 feet in diameter, had previously been scooped out in the ground, to a depth of several (4 or 5) feet. The floor of this hollow had been covered with stones of irregular shape, each about the size of a football. On them a fire of logs had been burning for 9 or 10 hours. The stones were of a whitish-grey colour, possibly owing to the action of the fire, mostly rounded or water-worn and of a granular surface. They had been specially brought from Mbengga by the performers. When we arrived, the logs, still glowing, had mostly been burnt up or reduced to charcoal. Before the ceremony began, any unburnt logs were carefully removed by native assistants by means of loops of twisted green bark attached to long poles. The stones were turned over by these men and roughly arranged so as to afford a fairly steady and secure foothold.

The native chief agreed, on behalf of the performers, to submit them to a full examination both before the ceremony began and after its completion. We selected two men whom we considered we could identify again after the performance. Both of them were of superb muscular development. The brown skin of their body and limbs had been oiled. They were arrayed in multi-coloured skirts of foliage and flowers; they wore chaplets of leaves of various colours around their heads, with a small tuft of white umbelliferous flowers implanted in the thick, wiry hair of the scalp growing vertically upwards for a length of 4 or 5 inches. Our preliminary examination yielded the following results:—

The feet were normal in form and texture. The skin of the soles was soft and pliable, neither unduly dry nor unduly moist, and showed no sign of any previous local application of oil or other substance. There was no undue or unusual degree of cornification, but there was a slight thickening of the skin over the whole sole, not more than would be expected in a man who had walked bare-foot all his life. The area of contact with the ground included a considerable portion of the centre and outer part of the sole, together with the heel and the balls of the toes, The skin of the feet in both men was sensitive to pain, as shown by wincing of the face in response to pin-pricks. As might be expected, the thinner skin of the dorsum was more sensitive than that of the sole. The response to heat was tested by the somewhat drastic method of applying the glowing end of a lighted cigarette. In one man contact of this burning end with the skin of the sole caused him immediately to wince: in the other, more prolonged contact, for a second or longer, was endured with apparent apathy, the end of the burning cigarette being eventually crushed against the skin near the centre of the sole without inducing a grimace, although he indicated that it was unpleasant. The reflexes in the lower limbs were normal, including brisk ankle-jerks with plantar responses of the normal flexor type.

After the foregoing examination, the two men, together with some seven or eight of their comrades, retired into a small hut of palm-leaves to prepare themselves for the " fire-walking." We did not enter the hut but one of us was told by the Chief that the ceremony consisted in prayer to a " small devil," who was invisible. During this part of the ritual, which lasted for several minutes, the hot stones were being carefully examined by the others to verify their steadiness. Several scraps of paper were thrown into crevices between the central stones, where the heat was sufficient to cause them to burst into flames almost immediately. The native assistants around the pit now began to chant songs and cries, which became progressively louder and louder. The performers now made their appearance, running from the prayer-hut over the damp grass to the pit. They walked across it in single file, stepping on the stones. The duration of contact of their feet with the stones was that of an average footstep and their walk was not appreciably hurried. Each man appeared to step exactly on the same stones as his predecessor. After they had crossed the diameter of the pit and walked a few steps just within its circumference, bundles of leaves and rushes, previously collected, were undone by the assistants and performers and quickly scattered over the stones, completely covering the central part of the pit. The performers, by this time standing at the edge of the pit, then returned into the pit and sat down carefully on the vegetation, huddled around the leader in the centre and facing him. Smoke began to rise in wisps from the leaves charred by the stones. The gluteal regions and feet of the performers were now separated from the hot stones by an intervening layer of vegetable material.

After a short interval, they rose and walked out of the pit. Our two selected performers came and sat down on the grass beside us for re-examination. Both of them, immediately after the fire-walking, were clearly somewhat excited. The pulse-rate in one was 96. Their hands were slightly tremulous. There was no undue dilatation or contraction of the pupils. The soles were covered with a thin layer of dust and ash. On brushing this off, there was no sign of injury to the skin, neither blistering, charring, nor recognisable erythema. In one man the plantar skin was not unduly hot, whilst in the other it was warm. The prick of a pin to the sole induced a grimace of pain in both men as before.

One of the larger stones, still hot, was extracted from the pit and rolled along the ground. The men and ourselves all sat down beside it. We asked them to put their hands on the stone, but they, like ourselves, could not give it more than a momentary touch. When asked to put their feet on it, they did so, but only for a second or so. The Chief himself, however, who was supervising us, placed the sole of his foot on the hot stone and held it there with placidity for several seconds. Some amusement was caused by the two performers, who slyly turned the stone over so as to induce us to touch a portion of its surface which had been fractured and which was apparently rougher and hotter than the smooth surface on which they had walked. We found that this surface was so hot that we could touch it only momentarily with our finger-tips. The soles of our feet also could only touch it for a very short time, perhaps a second, when the pain caused prompt retraction of the foot, followed by erythema but no blistering.

We were told that if either of us felt any pain, one of their old men could remove or cure it. One observer's feet was decidedly hot and painful from contact with the stone, and the venerable physician was accordingly invited to treat it. This he did in quite a professional manner, sitting down, taking the foot in his hands and asking which was the most painful spot. This he massaged gently and firmly with his thumbs with a deep stroking movement, which was quite pleasant and certainly seemed to relieve the pain. The other observer suffered no discomfort, beyond a transient tingling and erythema which passed off in a few minutes.

Comments.

Assuming the foregoing observations to be accurate and in particular accepting it as a fact that these Fijian performers actually walked with bare feet upon stones heated to a temperature high enough to ignite ordinary paper, various explanations for the phenomena have been offered, amongst which may be mentioned the following:—

(1) That the texture of the tissues on the plantar surface of the feet is abnormally tough, hard or thick, so as to act as a non-conductor. Our observations contradict such a theory. The skin of the performers' feet was neither thicker nor tougher than that of any other individual accustomed all his life to walk barefooted.

(2) That some analgesic substance (commonly rumoured to be oil from a particular variety of palm) is applied to the soles prior to setting foot on the hot stones; or that some opiate drug is administered internally to produce diminution of sensibility to pain. If this were so, examination of the feet immediately after the ordeal should have shown them to be still insensitive to pain. No such analgesia was present, nor was there any trace of oil or any other locally applied substance. There was no clinical evidence of opiate administration; the performers were mentally alert; their pupils were normal in size.

(3) That these Fijian natives possess a generalised blunting or abolition of sensibility to heat and pain. Careful testing showed no evidence of abnormal blunting of sensation. We noted, however, that both of the individuals whom we examined exhibited a degree of stoicism or indifference such as may be found in certain races less highly-strung than our own. Nevertheless, they reacted briskly and normally when painful stimuli were applied to the soles or elsewhere, both immediately before and immediately after their ordeal.

(4) That some organic lesion was present, implicating either the plantar nerves, the corresponding nerve-trunks or posterior nerve-roots (L 5 and S 1), or the spinal cord itself. The absence of any sensory, motor, reflex or trophic abnormalities excludes this possibility.

(5) That, by training and practice and by the repeated exposure of the soles to heat, the performers can endure, without severe pain, a temperature which to an untrained person is intolerable.

Several considerations have induced one of us (D W) to accept this view and to consider it unnecessary to seek any further explanation. The grounds for this view may be stated:—

It is, in the first place, a matter of common knowledge that, in some parts at least, repeated application of a painful stimulus to the skin, in time ceases to cause pain, in other words the threshold to pain is raised. The soles of the feet constitute one of these regions. . Thus, for example, children who discard shoes and stockings, after being accustomed to wear them, cannot, at first bear to walk over sharp gravel owing to the pain which it causes, but after a few days' practice they can do so with impunity. This may be ascribed to thickening and toughening of the tissues of their soles, but examination shows in them no definite thickening or added keratinisation and it would appear that there is a blunting of sensibility, or, more precisely expressed, that the threshold to pain has been raised.

It is also known that repeated exposure to high temperature raises the threshold to pain to a remarkable degree.

A person accustomed to immerse the hands in very hot liquids comes in time, to be able to plunge them, without experiencing severe pain or incurring any ill effects, into fluids of a temperature intolerable to one unaccustomed to it, and also to handle unusually hot objects, By habituation, hot liquids can be taken into the mouth and there come in contact with its. sensitive mucosa as well as with that of the tongue, without causing severe pain or local damage, although liquids of the same high temperature could not be endured on the skin surface and would produce on it a marked erythema and even a blister.

It was clear, from our observations of the feet before the ceremony or any preparation for it, that the soles of their feet were not readily affected by a thermal stimulus. In our preliminary examination both of the performers endured, without pain or retraction of their feet, the experience almost intolerable to an untrained European, of having the skin of the sole blackened by application of the glowing end of a cigarette. One of the men seemed to experience only slight discomfort, while the other indicated that it was merely unpleasant.

The comparison which we carried out after the ceremony, between the reactions obtained on the soles of our own untrained and sensitive feet, showed the difference between us and them, for while we could only touch momentarily the hot stone, they on the other hand, were able to apply their feet to it for a second or longer.

The temperature of the stones was doubtless sufficiently high to injure any organic matter long in contact with them and prolonged contact would have burned the soles of the feet. But the momentary contact of stepping over the stones did not cause even the least degree of burning or produce any erythema and still less any blistering or destruction of tissue. Since insufficient to produce any of these results, it cannot have caused any severe pain. It must be remembered that keratinised epithelium is very resistant to heat and their soles before the ceremony stood the application of a glowing cigarette end. After the ceremony, the Chief showed us that he could put his foot on a hot stone and keep it there for some seconds, withdrawing it only when, after that interval, he began to feel pain.

Doubtless, were one of the performers to slip while walking over the hot stones and fall on them, so causing the hands, arms or any portion of the skin of the trunk to be in contact with the stones, a severe burn might be caused, but it seems to me to be unnecessary to bring in any other factor to explain the performance.

(6) That the phenomena of transient therm-anæsthesia of the soles are due mainly to suggestion, either auto-suggestion by the performers themselves, or hetero-suggestion by their native chief or some other authority.

This, in the opinion of the other observer (J P–S) is a correct and adequate explanation. It is supported by the temporary duration of the indifference to intense heat as evidenced by the normal responses to pin-pricks and to thermal stimuli immediately before and also immediately after the fiery ordeal. It is also corroborated by the strict localisation of the sensory diminution to the soles of the feet, since the performers, whilst able to stand or walk on the hot stones, were unable to sit on them with their gluteal regions in direct contact, nor did they touch the stones with their hands. Moreover, the highly-significant preliminary religious ritual in the prayer-tent, whereby a degree of hypnotic suggestion is readily attainable, is closely analogous, and probably identical, with similar varieties of religious or hypnotic ecstasy, which I have witnessed in certain Hindu fakirs and also in groups of emotional dervishes in Algeria, Tunisia and other Mohammedan countries.

My friend, Professor K. W. Bouman, the distinguished neurologist of Amsterdam, who was also present at this fire-walking performance, and who examined independently another of the performers, informs me that he corroborates the occurrence of well-marked pain reactions in response to a burning cigarette and to pin-pricks applied to the soles both before and after the fire-walking. Professor Bouman allows me to state that he is in agreement with my view, viz., that the religious ritual within the prayer-hut is a preparatory ceremony for the purpose of "purifying" the devotees prior to the fire-walking, and that this ceremony is of fundamental importance to the performers. Professor Bouman has witnessed similar performances of walking in hot ashes in Java, where the religious ceremony is of the highest importance and is an indispensable preliminary for the fire-walking.

The absence of blistering or apparent tissue-necrosis on the exposed surfaces of the soles has been urged against this theory of suggestion or pithiatism. I would, however, recall the fact that similar marked abnormalities of vascular reactions in the skin and deeper tissues subjected to painful stimuli, have repeatedly been verified in patients under the influence of hypnotic suggestion. One of us has personally witnessed at close quarters completely bloodless and apparently painless transfixion of both cheeks, also of the whole thickness of the forearm, by skewers, as well as transfixion of the skin and subcutaneous tissue of the front of the neck by a bayonet, without a drop of blood appearing. Similar observations of bloodless transfixion of the deep tissues have been photographed and recorded by cinematograph, where a skewer entering at one side of the neck, behind the carotid sheath, traverses the pre-vertebral plane and emerges bloodlessly, on the opposite side, behind the great vessels of the neck.

Incidentally, it may be recalled that during deep hypnosis of suitable individuals, not only have negative reactions, such as absence of blistering, erythema or bleeding been observed, but reactions of a positive character may sometimes occur, *e.g.*, temporary spontaneous erythema and blistering subjacent to a fictitious fly-blister, such as an ordinary postage-stamp, devoid of cantharides or other cutaneous irritant.

Finally, I would call attention to the religious element in the foregoing ritual, indicating that this was not a habitual, trivial or daily performance, but an infrequent and specially prepared celebration. Religious ecstacy, as in the long procession of saints and martyrs of various creeds from the days of Shadrach, Meshach and Abednego in Nebuchadnezzar's fiery furnace (Daniel III 26) down to St. Joan of Arc, burnt at the stake at Rouen in 1431, and many other instances, all probably the result of auto-suggestion, is capable of temporarily suppressing sensations of pain. Such interruption or suppression of sensibility is a cortical affair, whereby the individual, for the time, succeeds in inhibiting and ignoring painful stimuli arising at the periphery.

We are indebted to His Excellency Sir Murchison Fletcher, K.C.M.G., Governor of the Fiji Islands, and to the Hon. H. C. Monckton, Acting Secretary for Native Affairs, for the opportunity of making the above observations.

A RE-SURVEY OF HOOKWORM DISEASE IN FIJI IN 1935, TEN YEARS AFTER MASS TREATMENT.*

By S. M. Lambert.

Among primitive peoples carrying heavy infections, mass treatment is an effective method of bringing certain disease conditions under control. Such treatment produces economic and social betterment, it provides a visible proof of the value of Western medicine, and it acts as an educative force toward better standards of sanitation.

Mass treatment of the population of Fiji for hookworm disease was begun on February 22, 1922. All areas in which the Willis Salt Floatation method showed a hookworm disease frequency of over 60 per cent. were included in the treatment campaign.

The most heavily infected areas in the whole Fiji group were the Rewa and Navua districts. Smear examinations of 190 persons taken from the general population indicated that 183 were infected. Only seven were not infected, and six of these were Europeans or half-castes. In 1917, 6,727 persons were examined, and the hookworm frequency was found to be 90 per cent. The frequency among Indians was slightly greater than that among Fijians. Out of 73 whites examined 21 per cent. were positive. These examinations in 1917 were by plain smear and centrifuge methods and were made by Dr. Paul.

In 1922 approximately 95 per cent. of the inhabitants of areas most heavily infected with hookworm disease were treated *en masse* by carbon tetrachloride. One month after treatment, 1,243 persons previously examined and found positive were re-examined, and 1,111, or 89 per cent., were negative. Twenty-one months later 200 persons with hookworm disease before treatment in 1922 were re-examined, and it was found that 56·6 per cent. were negative.

In 1924 the population of these heavily infected areas were again given mass treatment, although the campaign was not so intensive as the first and the percentage of population reached was not so high. Aside from these two mass treatments, the population has been left untreated except for small numbers of patients who have presented themselves to the district medical officers. A resurvey in 1935 should, therefore, show a fair picture of the results of mass treatment ten years after the termination of such treatment. One month after treatment in 1922 it was found that infection had been reduced, roughly speaking, to 10 per cent. to 15 per cent. Two years later another examination showed that the infection had increased to 43 per cent. to 45 per cent. in these heavily infected areas. Another mass treatment in 1924 to 1926 again reduced this infection to 15 per cent. to 20 per cent. In April and May, 1935, an examination was made of 2,066 persons in the areas where hookworm infection used to be heavy, and it was found that 1,072, or 51 per cent. were still positive for hookworm disease. The following tables present details as to geographical location, race, and age of those infected:—

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* The studies and observations on which this paper is based were conducted with the support and under the auspices of the International Health Division of the Rockefeller Foundation.

TABLE I.

District.	Examined.	Infected.	Per cent.
Suva–Rewa Road	924	445	48
Rewa district	599	384	64
Navua	543	243	45
Total	2,066	1,072	51

TABLE II.—INCIDENCE OF INFECTION BY RACE AND AGE.

	Adults.			Children.			Total.		
INDIANS.	Examined.	Infected.	Per cent.	Examined.	Infected.	Per cent.	Examined.	Infected.	Per cent.
Suva–Rewa Road	434	224	51	365	150	40	799	374	57
Rewa	291	189	65	190	109	57	481	298	62
Navua	284	141	50	159	60	38	443	201	45
Total ..	1,009	554	55	714	319	45	1,723	873	50

	Adults.			Children.			Total.		
FIJIANS.	Examined.	Infected.	Per cent.	Examined.	Infected.	Per cent.	Examined.	Infected.	Percent.
Suva–Rewa Road	82	54	66	43	17	40	125	71	57
Rewa	86	63	73	32	23	72	118	86	73
Navua	58	24	41	42	18	43	100	42	42
Total ..	226	141	60	117	58	50	343	199	58

Persons over 16 were classed as adults and persons between 3 and 16 years of age were classed as children. No children of three years or under were examined.

It is apparent that hookworm disease in these formerly heavily infected areas has been slowly spreading and increasing in volume. It is possible, however, that the disease has become less severe in form. In 1922, when the examinations for hookworm disease were made, the microscopic slides were full of eggs; on the present re-survey only an occasional field with an egg in it was encountered. Very few slides were found in which there was more than one egg per microscopic field. Two of the apparently most heavily infected persons among the first few hundreds examined were brought into hospital and given treatment. The number of worms recovered from these patients were respectively 20 and 6. More hookworm cases are now found among Fijians than among Indians; also, there were more eggs per slide among Fijians than among Indians. This is the reverse of the original condition and probably reflects the greater interest taken in sanitation by the Indians.

Apparently hookworm disease is coming back faster in the Rewa area than in the Navua area or in the Suva–Rewa area. Since 1922 the Navua area has changed from a cane-growing district to a dairy district, with an attendant loss of population. The Suva–Rewa area has for the past four years had a well-inspected and well-maintained system of sanitation, consisting of pit latrines with concrete slab. The Rewa district is a cane-growing area with heavy rainfall. Soil pollution was more noticeable in this area.

A factor in the relatively slow return of hookworm infection is the great improvement in soil sanitation that has occurred during the last fifteen years, and more particularly in the last four or five years, owing to the installation of the bored-hole type of latrine. Formerly most houses were without latrines. The standard has been raised from year to year and now one scarcely finds a house without one. However, the amount of hookworm infection found after ten years of lack of treatment cannot be said to be encouraging. A light general infection has again gradually been built up, and in the last three years medical officers have commented on the greater frequency of patients presenting signs of anæmia.

In 1922 children from 12 to 15 were universally affected with hookworm disease and enæmic to a marked degree. Since then evidence of less soil pollution and better sanitation is found in the strong growth of population. The population of the Fiji group in 1921 was 157,433; by 1934 this had grown to 197,499, an almost entirely natural increase of 40,000. Thirty thousand of these, it is fair to say, have grown to school age without treatment for hookworm infection, yet they show only a light infection.

The time may come when another mass treatment in the more heavily infected districts will be necessary. Even if treatments continue only in the present desultory fashion that time may not arrive, however, for several years. Need for mass treatment might be obviated altogether by persistent routine treatment of infected persons in all hospitals, schools, and institutions by District Medical Officers and Native Medical Practitioners. The past benefits of treatments have left the population in a receptive mood. They have no objection to hookworm treatment and in fact welcome it.

There is also evidence that if bored-hole latrines are well installed and well maintained, people will use them. Ultimately hookworm disease may be controlled without mass treatment.

SUMMARY AND CONCLUSIONS.

(1) Mass treatment of hookworm disease among primitive peoples is an effective means of bringing the disease under control.

(2) A re-survey of hookworm disease in Fiji in 1935, ten years after mass treatment, indicated that infection was only half of what it had been before the treatment campaign, and that infection was less severe in form. After ten years there were still few clinical manifestations of hookworm disease in areas where formerly there had been almost universal anæmia.

(3) The slow return of hookworm infection is attributed to a higher standard of soil sanitation introduced after 1922.

(4) Systematic treatment of hookworm cases by District Medical Officers and Native Medical Practitioners under their direction would probably obviate the need of further mass treatments.

A STUDY OF LEPROSY IN FIJI.

(Reprint from *International Journal of Leprosy*, Vol. 4 (1936), 55.)

By C. J. Austin.

INTRODUCTION.

The present study is based on the records of the Central Leper Hospital, Makongai, from its inception by the Government of Fiji in 1911 to the end of 1933. There have been more than 1,600 admissions to Makongai during that time, but a number of these cases were admitted only for short periods prior to repatriation to India. Of the cases admitted, only those whose notes were sufficiently full to be of statistical value have been included in this survey. The total of these is 1,378, but 13 of them were discharged at various times as non-lepers, which leaves 1,365 cases for analysis.

Unfortunately, it has proved impossible to do more than indicate the possibility of racial differences in relation to leprotic infection, owing to the multiplicity of factors involved. For this reason too much stress must not be laid on the comparative statistics, for example regarding the Fijians and Indians, for as indicated in the text repatriations have rendered the Indian data unsatisfactory from this point of view.

HISTORICAL.

As is the case with other South Sea Islands it is impossible to be definite with regard to the duration of leprosy in Fiji. To the Chinese is commonly ascribed the introduction of the disease into the South Seas, but there are indications that leprosy must have been present in Fiji for a much longer period than is generally believed.

The earliest known mention of the disease here was made by Lyth of the Methodist Mission, who in 1837 (7) briefly recorded that cases were being treated by himself and his ministerial colleagues. However, the Fijian language has at least two definite names for leprosy: " sakuka " in the western dialects, and " vukavuka " in the now more generally accepted Mbauan dialect. Neither of these terms has any other meaning and, moreover, there are a number of subsidiary names for the various symptoms. Fijian mythology furnishes additional evidence of prolonged acquaintance with the disease, one of their gods being a reputed sufferer. Furthermore, as reported by Corney (3) there are a number of " leprosy stones " (vatu ni sakuka) scattered throughout Viti Levu. These were the property of certain families which were infected to a greater or less extent, and by their aid the heads of the families could hand on the infection to anyone obnoxious to them.

The same writer records a complaint of the Fijians that leprosy was increasing as the result of the action of the Government in prohibiting the destruction of lepers. It would appear, however, that the only lepers put to death were very advanced with ulcerating nodules, or those helpless from crippling deformities. This suggests that they were clubbed more to put them out of their misery than because they were sufferers from leprosy; those sick from any disease were dealt with more or less similarly.

A story is told regarding a small island to the north of Vanua Levu in Mathuata Bay, close to the island of Kia. It is little more than a stony ridge which the inhabitants of Kia used as a dumping ground for rubbish of all kinds, giving it the name of " de ni Kia," (the refuse of Kia). On this salubrious spot were isolated a number of advanced cases of leprosy, in order that the local chief should never be without a " bokola " (body prepared for the oven) with which to welcome visitors or celebrate any important event !

There appear to have been, from very early times, Fijians who claimed to be able to cure leprosy, but as more recently cases that had been treated by such people have been admitted to Makongai the cures were evidently more apparent than real. However, a case is reported by Moore (9) of which he claims to have personal knowledge, that of a young Fijian sufferng from leprosy who submitted to being " smoked " over burning " sinu qaqa " (*Excœcaria agallocha*, Linn.) and so recovered his health. The sinu tree referred to is well known in Fiji and is intensely poisonous, although some Fijians appear to be immune to its action. Cases have occurred in which the eating of prawns from a fresh water creek into which sinu leaves had fallen has provoked in both Europeans and natives the most extreme diarrhœa and collapse, which was later followed by an intensely irritating eruption.

The first direct administrative step taken by the Government of Fiji concerning lepers was the passage of the Lepers Ordinance 1899. This Ordinance forbade certain callings to the lepers, and gave the Governor power to establish leper asylums and to consign thereto any leper in the gaol or lunatic asylum or any leper guilty of an offence against the Ordinance.

As a result of this Ordinance a leprosy station was established on the island of Mbengga, to the south of Suva. It is remarkable that the Chief Medical Officer was able to report in 1910 that 90 per cent. of the inmates of Mbengga had come there voluntarily. However, it was impossible to acquire the whole island, and it gradually became evident that this was essential if isolation was to be absolute. In 1909 the island of Makongai was bought for the purpose by the Government, and after certain delays, due to financial stringency, 40 patients were transferred from Beqa in 1911.

THE PRESENT LEPROSARIUM.

Makongai, which was a coconut plantation before its purchase by the Government, is a reef-encircled island about two and a half miles long and one and a half miles broad. It lies in the Koro Sea between the main islands of the Group—Viti Levu and Vanua Levu—and is about 17 miles from Levuka, the former capital of the Colony. Its flat land is limited to an irregular area around the sea coast, bounded inland by rocky ridges leading up to numerous peaks, the highest of which are more than 850 feet above sea level. The climate is agreeable, being considerably modified by the sea breezes.

The hospital proper is situated at Dalice on the northwest coast. It is divided into two compounds, the two sexes being kept strictly separate. The women's compound has accommodations for all the female patients, but the men's compound is used only for the helpless, the acutely ill, and those requiring special attention. In the hospital area, also, are the the administrative block, pharmacy, operating theatre, dressing-rooms, laboratory, &c. Most of the buildings are of wood, raised on concrete piles and with corrugated iron roofs, ceiled on the inside. Dressing-rooms and baths are floored with concrete. Two Delco engines provide power for light in the hospital buildings, as well as for the cinema and two refrigerators.

Men able to look after themselves are housed in five outlying villages. So far as possible the men are assigned to these according to race, each village having its own headman. There is a dressing-room in each village where dressings are made daily, but patients come to hospital for injections or other special treatment.

The gradual increase in numbers of inmates at Makongai since its inauguration will be seen from Table 1, which gives the total number of patients at the end of each year.

Table 1.—Numbers of Inmates at Makongai, by years.

Year.	*No.*	*Year.*	*No.*
1911	40	1923	289
1912	154	1924	272
1913	177	1925	297
1914	279	1926	302
1915	249	1927	438
1916	287	1928	409
1917	314	1929	442
1918	327	1930	433
1919	352	1931	494
1920	243	1932	476
1921	216	1933	427
1922	266		

TYPE OF THE DISEASE.

The classification utilized for the purpose of this study is, in the main, that recommended by the Manila Conference (8). The " mixed " group, however, has been omitted on the ground that, as shown below, every cutaneous case is regarded as suffering from some degree of nerve involvement. Our experience at Makongai also renders the classification into "cutaneous " and " neural " practically identical with that of " open " and " closed," a recent survey having failed to reveal a single case in which the nasal mucosa was positive that did not also show positive skin smears. It may therefore be taken that the cases recorded as neural have been bacteriologically negative, or closed, cases.

Of the 1,365 cases available for analysis, 746 were neural in type and 619 were cutaneous, as is seen from Table 2. This gives percentages of 54·7 for the neural type and 45·3 for the cutaneous type over the whole period. Hopkins and Denney (6), reporting on 718 cases in the United States Federal leprosarium, at Carville, Louisiana, record only 11 per cent. as neural, 39·1 per cent. " skin " and 49·9 per cent. " mixed," which under the scheme of classification here used would give 89 per cent. cutaneous.

In a previous study of 100 cases of leprosy in children (1) the writer found 54·3 per cent. to be neural, but of 20 cases under the age of ten years 16 (80 per cent.) were so classed. This was taken as an indication of an earlier stage of infection, and it was argued that every case of leprosy passes through a neural stage, none of the cases failing to show some degree of interference with sensation. As a test of the truth of that argument every patient at Makongai was recently examined for evidence of nerve involvement, and the only instance in which this could not be demonstrated was that of a European admitted in 1926 as a C2 case and now quiescent. However, it was found from his records that for some time after admission he had required periodical treatment for ulnar neuritis. It may therefore be assumed that so far as leprosy as met with in Fiji is concerned there is no such condition as pure cutaneous leprosy without some degree of nerve involvement.

Table 2.—Relation of Race and Type of Disease.

Race.	No. of cases.	Neural.					Cutaneous.				
		N1.	N2.	N3.	Total.	Per cent.	C1.	C2.	C3.	Total.	Per cent.
Fijian	444	44	163	81	288	65·0	11	83	62	156	35·0
Solomon	130	15	39	16	70	53·8	4	31	25	60	46·2
Rotuman	26	..	7	4	11	(42·3)	..	6	9	15	(57·7)
Samoan	34	5	5	2	12	(35·3)	4	11	7	22	(64·7)
Tongan	13	1	3	3	7	(53·8)	2	2	2	6	(46·2)
Cook	80	15	28	9	52	65·0	8	14	6	28	35·0
Maori	4	1	..	1	2	(50·0)	..	1	1	2	(50·0)
Niue	3	..	..	..	..	....	..	3	..	3	(100·0)
Indian	595	74	164	53	291	48·9	34	180	90	304	51·1
Chinese	18	..	3	2	5	(27·8)	1	6	6	13	(72·2)
European	18	3	3	2	8	(44·4)	..	6	4	10	(55·6)
Total	1,365	158	415	173	746	54·7	64	343	212	619	45·3

Percentages in parentheses pertain to groups of less than 50.

Race and Type of Disease.—Data on the type distribution of the different races is given in Table 2. Analysis of these figures indicates that the gross percentages given above represent real averages and do not serve to cloak any racial extreme. Thus the percentages of neural cases are: for 444 Fijians, 65·0; for 130 Solomon Islanders, 53·8; for 80 Cook Islanders, 65·0; and for 595 Indians, 48·9. Figures for 1933 show that of 510 inmates of Makongai during the year, 44·1 per cent. were neural, and that of 34 fresh admissions 67·6 per cent. were of that type (4).

SEX.

With regard to sex, the well-known but so far unexplained large male majority is further exemplified by our figures. Thus 1,049 (76 per cent.) were males and 329 (24 per cent.) were females, a ratio of 3·2/1. It must be borne in mind, however, that the Indian population of the Colony of Fiji still shows a preponderance of about 14,000 males over females, and that during the earlier part of the period concerned in these statistics the discrepancy was much greater, so that the Indian male percentage of 81 per cent. is certainly too high. However, the Fijians, whose male and female populations are more nearly comparable, and have been more or less stable over the period concerned, are not far behind with 73 per cent. males.

Table 3.—Relation of Sex and Type of Disease.

Sex.	No. of cases.	Neural.					Cutaneous.				
		N1.	N2.	N3.	Total.	Per cent.	C1.	C2.	C3.	Total.	Per cent.
Male	1,039	101	312	135	548	52·7	49	277	165	491	47·3
Female	326	57	103	38	198	60·7	15	66	47	128	39·3
Total	1,365	158	415	173	746	54·7	64	343	212	619	45·3

In the case of children, however, the difference between the sexes is much less striking, the percentages being 57·2 for males and 42·8 for females, while of 20 cases under ten years of age the number in each sex was the same (1). This is very different from the figures given by Rogers (12) as taken from the data of five Indian censuses, according to which there was an average of 92 females as against 45 males in the 0—5 age period, and 200 females as against only 103 males in the 5—10 year period. Rogers, however, does not lay much stress on these figures, and indeed remarks that

> " . . . . . . it is difficult to suppose that there can be much actual difference in the proportion of boys and girls infected and developing the disease in the first five years of life, as sex distinctions develop long after that age."

This statement is supported by the Makongai figures.

The suggestion of Cooke (2) attributing the sex and age distribution of the disease to the factor of " domesticity " is an attractive one to explain this similarity of the sexes in the lower age periods, but to be adequate it would need to be correlated with a higher adult female incidence, which is not the case. It may be, however, that there is a double explanation in this country. The adult male Fijians, most of whom leave their homes for longer or shorter periods of indenture in other districts, are still in Cooke's " pioneering " stage. This fact provides more numerous opportunities of infection among men, who live together in " lines " at their places of indenture, with less likelihood of infection being carried to their women folk.

Sex and Type of the Disease.—There is little evidence in our data that sex plays any role of importance in determining the type or course of leprosy. As is shown in Table 3, the neural type was found in 52·7 per cent. of the males (548 cases) and in 60·7 per cent. of the females (198) cases, though in the early nerve class there is a 2 : 1 male–female ratio instead of the general 3 : 1 ratio. On the whole, then, the females show a slight advantage as regards the stage of the disease. Data on the relation of sex and response to treatment are given later in this report.

Table 4.—Causes of Death.

Diagnosis.	*Cases.*	
Leprosy and exhaustion from leprosy	102	
Leprotic exhaustion and senility	28	
	—	130
Pulmonary tuberculosis	71	
Generalised tuberculosis	38	
Other forms of tuberculosis	8	
	—	117
Septic absorption		44
Nephritis		35
Pulmonary conditions other than tuberculosis		24
Circulatory conditions		28
Alimentary conditions		14
Malignant disease		8
Tetanus		6
Unclassified		11
Total ..		417

MORTALITY AND CAUSES OF DEATH.

A total of 417 deaths have occurred at Makongai, as shown in Table 8, but any attempt to work out mortality rates for leprosy from these figures would be futile. Of the 1,365 cases dealt with in this report, 298 Indians were repatriated in fairly good physical condition. Of the 1,067 remaining cases analyzed with respect to results of treatment, 260 have been conditionally discharged. Thus the patients least likely to contribute to the mortality rate are continually leaving the hospital, which makes the actual death-rate disproportionately high. The highest rate recorded was 116·6 per thousand in 1930, but this was followed in 1931 by 84·2, in 1932 by 36·1 and in 1933 by 66·6. Such extreme variations without any very obvious reason indicate the small value to be placed on any such calculations, although the 1930 rate does to a certain extent reflect the results of severe epidemics of dysentery and influenza, whereas the 1932 rate results from a year remarkably free from epidemic disease. The death-rate is therefore decided by side issues and not by leprosy.

The main causes of death recorded are shown in Table 4. The diagnoses recorded should not, however, be allowed to obscure the fact that it is the leprous process that, by lowering the resistance, underlies many of these other conditions. It is no more correct, for example, to regard sepsis as the cause of death in leprosy than in a transverse section of the cord.

It may be of interest to compare this summary with Harper's analysis of the causes of the first 157 deaths at Makongai, up to 1921 (5). The first four causes were: tuberculosis, 42 cases; septic infection, 31 cases; nephritis, 18 cases; leprosy, 14 cases. If, however, exhaustion and senility be added to his leprosy figure in order to render the lists comparable, leprosy comes third with 22 cases. A comparison of Harper's data thus corrected, with our own total to the end of 1933, is given in Table 5.

Table 5.—*Comparison of Principal Causes of Deaths, Harper's data* (*to* 1921) *and present Total* (*to* 1933), *in percentages.*

To 1921.		To 1933.	
Tuberculosis	26·7	Leprosy	31·1
Septic infection	19·7	Tuberculosis	28·0
Leprosy	14·0	Septic absorption ..	10·5
Nephritis	11·4	Nephritis	8·3

Mortality and Type of Case.—An analysis of the deaths with reference to the type of the disease (Table 6) shows, as one would anticipate, a more or less regular gradation in mortality from the less to the more advanced cases. In the same table is an analysis of the duration of the disease at the time of death with respect to type. This presents certain features that are somewhat surprising. According to our data the average duration in those who died has been only 5·9 years, with wide variations in the different stages of the disease. To find the longest duration in the most advanced stage of each type obviously requires some explanation. It should first of all be pointed out that the figures are admittedly too low. In the great majority of cases, even among the least advanced, no reliable history as to duration could be obtained. Therefore, rather than base this analysis on mere estimates, which could only be approximate and might be far from correct, the date of admission to Makongai has been used instead of the date of the first appearance of symptoms.

Table 6.—*Relation of type of case to* (a) *number of deaths and* (b) *average duration at the time of death.*

Type of case.	No. of cases.	Deaths.		Average duration years.*
		No.	Per cent.	
Neural, slight (N1)	158	13	8·2	2·4
Neural, moderate (N2)	415	95	22·8	5·4
Neural, advanced (N3)	173	61	35·2	7·9
Cutaneous, slight (C1)	64	16	25·0	3·4
Cutaneous, moderate (C2)	343	115	33·5	4·8
Cutaneous, advanced (C3)	212	117	55·1	7·0
Total	1,365	417	30·5	5·9

* For explanation of these figures see text.

Referring again to the causes of death, it may probably be taken for granted that the deaths more directly attributable to leprosy or its effects are those certified as due to leprosy, exhaustion and senility, septic absorption and nephritis. A tabulation of these deaths according to type (*Table* 7) offers the gradation one would expect.

The analysis shows, in the first place, the great disproportion between the two types in this respect, 63·3 per cent. of deaths in cutaneous cases being attributed to leprosy and only 30·8 per cent. of neural deaths. It is of interest that there were no deaths directly attributable to leprosy in the early neural stage, so that the duration of 2·4 years given for this stage in the gross analysis (Table 6) is very misleading. It further indicates that only about 50 per cent. of the total deaths in this institution can fairly be ascribed to leprosy, and that most of these deaths occurred in the more advanced stages. As for duration, considering only those cases indicated in Table 7, an average duration of 7·2 years has been obtained, as against the general average of 5·9 years. Of these 209 cases, 70 had lived more than ten years after admission to Makongai.

Using the same assumption (that deaths certified as leprosy, exhaustion, senility, sepsis and nephritis are all actually due to leprosy) the comparative percentages for the periods to 1921 and to 1933 are 40·1 and 50·1, respectively. This increased proportion is to be expected with the passage of time, advanced cases of leprosy being left behind as a result of the sifting processes of repatriation and discharge.

Table 7.—Relation of type of case to deaths attributable to leprosy.

Diagnosis.	No. of cases.	Neural.					Cutaneous.				
		N1.	N2.	N3.	Total.	Per cent.	C1.	C2.	C3.	Total.	Per cent.
Leprosy and exhaustion with senility	130	..	12	17	29	22·3	4	37	60	101	77·7
Septic absorption	44	..	9	5	14	31·8	2	14	14	30	68·2
Nephritis	35	..	3	6	9	25·7	..	10	16	26	74·3
Total	209	..	24	28	52	24·9	6	61	90	157	75·1
Percentages of total deaths of each type	50·1*	0·0	25·2	45·9	..	....	37·5	53	76·9	..	.. ..

* Percentages of all deaths.

RESULTS OF TREATMENT.

An analysis of the results of treatment in this hospital since its inception is shown in Table 8. This pertains to the 1,067 cases that remain after deducting those repatriated to India (298) and the few (13) that have been released unconditionally as non-lepers. In it are given (*a*) the total figures relating to improvement, &c., and details of the relation of such changes to (*b*) race, (*c*) sex, and (*d*) type of case.

A total of 260 cases, or 24·4 per cent. of all of the cases here considered, have been liberated under the regulations governing conditional discharge as having been free from all signs of leprous activity over a period of two years. A total of 33 of these cases were re-admitted later, and eight of them have been re-discharged.

With regard to the results of treatment in the different races, a comparative assessment as between Indians and Fijians, which might well have been instructive, is unfortunately impossible because of the repatriation of so many of the former. With regard to these repatriates, it may be taken as a fact that all of them had improved up to a point before discharge but that many would probably have retrogressed later, for 138 of them (46·3 per cent.) were cutaneous in type. Nevertheless, there is a general impression at Makongai that the East Indian does better under treatment than the South Sea Islander. This fact, however, is probably due not so much to any inherent resistance or difference in reaction to the disease as to the Indian's anxiety to improve, which results in better care of himself and greater willingness to submit to dietary and other restrictions than is the case with the careless, carefree native of the group.

Table 8.—Results of treatment (a) *in total, and in relation to* (b) *race,* (c) *sex, and* (d) *type of case. a*

Group.	No. of cases.	Dis-charged.	Quiescent.	Improved.	Stationary	Worse.	Dead.	Percentages.	
								Dis-charged. *b.*	Improved. *c.*
A—Total— ..	1,067	260	79	189	71	51	417	24·4	49·5
B—Race—									
Fijian ..	443	146	23	46	25	22	181	33·0	48·6
Solomon ..	130	26	16	14	5	7	62	20·0	43·1
Rotuman ..	26	5	....	5	2	1	13	(19·3)	(38·5)
Samoan ..	34	7	3	8	1	2	13	(20·6)	(52·9)
Tongan ..	13	1	....	2	4	2	4	(8·5)	(23·1)
Cook	80	23	4	14	6	3	30	28·8	51·2
Maori.. ..	4	1	....	....	....	1	2	(25·0)	25·0)
Niue	3	....	....	1	....	....	2	(0·0)	(33·3)
Indian ..	299	43	30	95	27	8	96	14·4	56·2
Chinese ..	18	4	....	2	1	4	7	(22·2)	(33·3)
European ..	17	4	3	2	....	1	7	(23·6)	(53·0)
C—Sex—									
Male	776	198	53	126	54	40	305	23·1	48·7
Female ..	291	62	26	63	17	11	112	21·3	51·9
D—Type—									
N1	121	58	22	19	9	....	13	48·0	81·9
N2	325	146	25	24	9	26	95	44·9	60·0
N3	140	41	25	6	5	2	61	29·3	51·4
Total ..	586	245	72	49	23	28	169	41·8	62·4
C1	51	3	3	19	5	5	16	5·9	49·1
C2	257	12	1	80	32	17	115	4·7	36·3
C3	173	....	3	41	11	1	117	0·0	25·4
Total ..	481	15	7	140	48	23	248	3·1	33·6

a. Not including 13 non-lepers released unconditionally, and 298 cases repatriated to India,

b. Patients discharged conditionally, disease arrested.

c, Total cases improved, including those discharged conditionally.

Type and result of treatment.—Some of the data on the relation of the results of treatment and the type and stage of the disease are sufficiently interesting to be set forth separately. Outstanding is the difference as regard the conditional discharges, with 41·8 per cent. for the neural cases and only 3·1 per cent. for the cutaneous. Even considering all degrees of improvement, the total figure for the former is nearly twice that for the latter. Details for the difference degrees of advancement with regard to (1) discharged, (2) quiescent, (3) improved, and (4) total improved are as follows:—

(1) *Discharged* (total 260 cases)—

N1, 48·0 per cent. (58 cases).
N2, 44·9 per cent. (146 cases).
N3, 29·3 per cent. (41 cases).
C1, 5·9 per cent. (3 cases).
C2, 4·7 per cent. (12 cases).
C3, no cases.

(2) *Quiescent* (total 79 cases)—

N1, 18·2 per cent. (22 cases).
N2, 7·7 per cent. (25 cases).
N3, 17·8 per cent. (25 cases).
C1, 5·9 per cent. (3 cases).
C2, 0·4 per cent. (1 case).
C3, 1·7 per cent. (3 cases).

(3) *Improved* (total 189 cases)—

N1, 15·7 per cent. (19 cases).
N2, 7·4 per cent. (24 cases).
N3, 4·3 per cent. (6 cases).
C1, 37·3 per cent. (19 cases).
C2, 31·2 per cent. (80 cases).
C3, 23·7 per cent. (41 cases).

(4) *Total improved* (528 cases)—

N1, 81·8 per cent. (99 cases).
N2, 60·0 per cent. (195 cases).
N3, 51·5 per cent. (72 cases).
C1, 49·0 per cent. (25 cases).
C2, 36·2 per cent. (93 cases).
C3, 25·4 per cent. (44 cases).

The rates, on the whole, show the differences that would be expected between the different types of cases and the different degrees of advancement. Because of the contrast between the numbers of neural and cutaneous cases discharged, that in the quiescent list is consequently less. The reverse contrast in the proportions that were merely improved naturally follows from the preceding. It may be remarked that of the 15 cutaneous cases that were discharged seven were re-admitted on account of reactivation of the disease, so that only eight cutaneous cases have remained free from activity.

With regard to results of treatment in the different sexes, it is found that the total of males improved, including those classified as "conditionally discharged," "quiescent" and "improved," amounted to 377, or 48·5 per cent., while the total of females improved came to 151, or 51·9 per cent. If the Indian repatriates, most of whom were greatly improved before leaving Makongai, were included the males would have shown an improvement rate of 61·6 per cent. and the females of 56·7 per cent.

It is evident that while cases in all stages of the disease may be improved under treatment, the prognosis as regards "cure" and ultimate discharge is very poor in the cutaneous type. These findings enable us to corroborate the opinion of Harper (5)—difference in terminology being noted—who in a paragraph on prognosis says:—

> " . . . . . . that all cases of purely skin leprosy (*i.e.*, such as are characterized only by macules without demonstrable nerve lesion or nodule formation and without acid-fast bacilli in the nasal mucus) can be cured by modern methods, that many cases of nerve leprosy can be cured, and that some nodular cases can be cured. Cure or failure will thus largely depend on early diagnosis and treatment."

This is a truism, but one which needs to be stressed periodically. From the same viewpoint Neff (10) offers a word of warning regarding cutaneous cases:—

> "I am now strongly of opinion that while our Ordinance serves splendidly for maculo-anæsthetics and the more developed nerve cases, two years of inactivity is not sufficient for the few individuals, with true leprous infiltration of the skin, who become negative. Treatment abruptly ceases on their discharge and they return to their village life, rather outcasts usually, where they never take up their life as they left it and soon, through neglect, are covered with scabies and some form of ringworm probably. Under the circumstances, a fair percentage are almost bound to become, in a disease such as this, active again."

Table 9.—Results of the follow-up of patients conditionally discharged.

Race.	*Discharged.*	*Re-admitted.*	*Died.*	*No record.*
Fijian	146	25	25	19
Solomon	26	5	4	1
Cook	23	..	..	18
Samoan	7	..	..	..
Rotuman	5	1	2	..
Tongan	1	..	..	..
Maori	1	..	1	..
Indian	43	6	1	12
Chinese	4	1	..	..
European	2	..	..	..
Half-caste	2	..	..	..
Total	260	38	33	50

As a result of the general tightening up of examinations, in particular of " quiescent " cases it is hoped that the required two years of observation will prove sufficient to eliminate those who might run the risk of reactivation. The resolution of " true infiltrations of the skin " takes place very gradually, so that the process of healing has been going on for a considerable time, in the majority of cases, before any question of their admission to the " survey list " arises.

With regard to the follow-up of discharged patients, 210 out of the 260 cases have been examined periodically and reported on within at most a year of the time of writing. The data on these cases are given in Table 9.

Of the 50 cases that were not traced, 18 have returned to the Cook Islands, leaving 32 untraced in Fiji. There have been 38 re-admissions, 5 of which were only for treatment of trophic lesions, so that there remain 33 reactivations; eight of these have been redischarged. Of the 139 remaining after the deduction of those re-admitted,untraced and dead, those remaining well are as follows:—

Well for 16 years	1	Well for 8 years	10
,, 14 ,, ...	3	,, 7 ,, ...	5
,, 13 ,, ...	2	,, 6 ,, ...	12
,, 12 ,, ...	4	,, 5 ,, ...	12
,, 11 ,, ...	13	,, 4 ,, ...	17
,, 10 ,, ...	3	,, 3 ,, ...	8
,, 9 ,, ...	5	,, 2 ,, ...	17
		,, 1 ,, ...	27

DISCUSSION.

In an interesting paper recently published Strachan, of South Africa (13), appears somewhat sceptical with regard to the beneficial effect of chaulmoogra oil and its derivatives in the specific treatment of leprosy, and this scepticism appears justified by the results reported by him as occurring with little or no treatment. He claims that " more than fifty per cent. of N1 patients undergo arrest spontaneously when placed under proper conditions." This is greatly at variance with the results given herein. At Makongai intensive treatment with chaulmoogra derivatives has produced only 48 per cent. of arrests in early nerve cases, while with " treatment approaching adequacy " Strachan has had 79 per cent. of arrests. With cutaneous cases our arrests amount to 3·1 per cent. as compared with the African percentages of 3·8 for untreated and 13·2 for treated cases. Our numbers of early cutaneous cases are undoubtedly small, but we can only claim 5·8 per cent. of arrest in such cases, as against Strachan's 21·4 per cent. One is almost tempted to echo, for these cases, the question of Burnet regarding the discharges from Culion which Strachan quotes:—" What becomes of the liberated ? " But this would be unfair.

There must, however, be some factor entering into the assessment of results that renders these two sets of records incomparable. It is admitted that among contacts of lepers there are probably numbers of people infected who, owing to a high degree of resistance, never show signs of the disease. This explains the long incubation period in some cases, and the incidence in such of our own cases as give a history of freedom from symptoms until the advent of pregnancy or of some debilitating condition such as dysentery. A better prognosis does appear to be justified in such cases, provided the antecedent condition is one that can be removed.

It may well be that the average Native in the district dealt with by Strachan is habitually below par as the result of nutritive or infective factors. Such cases would naturally exhibit a low threshold to leprosy, and it is quite probable that the removal to " proper conditions," with good food and treatment of intercurrent diseases, would suffice to raise the resistance level and so produce a large proportion of spontaneous cures. In Fiji, on the other hand, the average Native is comparatively well-fed, and he is accustomed to seek out the Medical Officer or Native Medical Practitioner of his district for treatment of his ailments. His general resistance is therefore high, and when he does exhibit signs of leprosy general hygienic and other treatment are insufficient to produce spontaneous cure, and recourse must be had to the chaulmoogra preparations. This is, of course, pure speculation regarding the condition of the African Native dealt with, but it is difficult to conceive of such gross differences in results without some such explanation.

Another recent paper, by Rodriguez, of the Philippines (11), works up to the conclusion that " the chaulmoogra oil derivatives do not seem to be as effective in incipient leprosy as in the more advanced cases with lesions showing acid-fast bacilli." If that be accepted at its face value it would surely be more logical to let our incipient cases develop into the more advanced grades in order to gain the benefit of chaulmoogra oil treatment. This conclusion, however, is not in harmony with our Makongai figures, which are based mainly on the use of chaulmoogra derivatives. It may, of course, be objected that our early nerve cases would have become arrested by the " proper conditions " referred to above, but this is purely hypothetical, and judged by our own experience of early cases that have neglected chaulmoogra treatment it cannot be accepted.

SUMMARY.

Leprosy has been in existence in Fiji from a very early date.

A leprosy station was established by the Government of Fiji on the island of Mbengga in 1900, and the present hospital at Makongai was opened in 1911. The number of patients has increased from 40 in 1911 to 427 in 1933.

Of the 1,365 cases recorded, 54·7 per cent. were neural in type and 45·3 per cent. were cutaneous. Investigation serves to indicate that there is no such condition as pure cutaneous leprosy without some degree of nerve involvement.

The sex ratio of the patients was 3·2 : 1, with 76 per cent. males and 24 per cent. females. No evidence appears that sex played any part in determining the type or course of the disease in these patients.

There have been 417 deaths in the series, of which about 50 per cent. could fairly be attributed to leprosy.

Of the cases dealt with, 24 per cent. have been conditionally discharged. There were 33 re-admissions, of which 8 have been re-discharged to date.

The most satisfactory improvement occurred in the earlier nerve cases, and it is found that while all types can be improved the prognosis of cutaneous cases as regards cure is comparatively poor.

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RETURN OF DISEASES AND DEATHS AT THE COLONIAL WAR MEMORIAL HOSPITAL FOR THE YEAR 1935

Disease.	Admissions.					Deaths.
	Europeans.	Fijians.	Indians.	Others.	Total.	
ACUTE INFECTIOUS DISEASES.						
Typhoid	1	7	7	1	16	2
Dysentery—Bacillary	4	62	33	9	108	12
Dysentery—Amœbic	1	3	2	..	6	..
Malaria	..	1	..	..	1	..
Measles	..	..	..	1	1	..
Pertussis	..	1	..	..	1	..
Diphtheria	7	2	2	3	14	..
Influenza	1	8	9	7	25	..
Mumps	1	..	..	..	1	..
Chicken-pox	3	4	1	..	8	..
Cow-pox	1	..	..	1	2	..
Tetanus	..	..	..	1	1	1
Acute Coryza	..	3	..	3	6	..
Sapræmia, Septicæmia P. ..	2	..	..	1	3	2
Rheumatic Fever	1	4	12	..	17	..
Frambœsia—Yaws	..	6	..	3	9	..
Leprosy	..	8	31	4	43	..
Ex Lepers from Makogai ..	..	..	1	..	1	..
Febricula	..	..	2	..	2	..
Fungus Diseases	..	..	..	..	..	..
Other Infectious Diseases ..	..	..	..	1	1	..
Total	22	109	100	35	266	17
TUBERCULAR AND VENEREAL DISEASES.						
T.B. Meningitis	..	1	..	1	2	2
Pulmonary Tuberculosis ..	2	22	13	8	45	17
T.B. of Bones, Joints, &c. ..	..	3	..	..	3	1
T.B. of Lymph Glands . ..	..	3	..	2	5	1
Other forms of T.B.	1	1	..	1	3	..
Primary Syphilis	1	..	..	..	1	..
Acute Gonococcal Infections ..	2	..	6	1	9	..
Chronic Gonococcal Infections	2	..	5	..	7	..
Total	8	30	24	13	75	21
MALIGNANT DISEASES.						
Rodent Ulcer	4	..	..	..	4	..
Epithelioma of Skin	1	1	..	..	2	..
Carcinoma Stomach	..	..	2		2	2
Do. Rectum	..	..	2	..	2	..
Do. Urinary Bladder ..	1	..	..	..	1	1
Do. Kidney and Ureter	..	..	..	1	1	1
Do. Breast	..	..	..	1	1	..
Do. Uterus	1	1	2	..	4	1
Secondary Carcinoma	1	..	..	..	1	1
Carcinoma of Other Organs ..	1	3	1	1	6	2
Secondary Sarcoma	..	..	1	..	1	..
Total	9	5	8	3	25	8
BENIGN TUMOURS AND CYSTS.						
Lipoma	..	2	..	1	3	..
Fibroma	..	2	..	..	2	..
Papilloma	..	..	..	1	1	..
Adenoma	..	1	..	..	1	..
Sebaccous Cysts	1	1	1	..	3	..
Other Types of Benign Tumours or Cysts	..	3	1	..	4	..
Total	1	9	2	2	14	..
DISEASES OF METABOLISM AND THE ENDOCRINE ORGANS.						
Diabetes Mellitus	5	..	7	..	12	4
Goitre—Simple non-toxic ..	..	..	2	..	2	..
Goitre—Toxic	..	..	2	..	2	..
Other Endocrine Disorders ..	..	..	1	..	1	..
Rickets	..	1	1	..	2	..
Epidemic Dropsy	..	..	1	..	1	..
Pellagra	..	..	..	1	1	..
Myxœdema	1	..	1	..	2	..
Total	6	1	15	1	23	4

Disease.	Admissions.					Deaths.
	Europeans.	Fijians.	Indians.	Others.	Total.	
DISEASES OF BLOOD AND LYMPHATIC SYSTEM AND CHRONIC INTOXICATIONS.						
Primary Pernicious Anæmia ..	..	..	8	..	8	2
Secondary Anæmia	1	..	4	1	6	2
Other Types of Anæmia ..	..	..	2	1	3	..
Lymphadenoma	..	1	..	..	1	..
Filariasis	2	8	..	1	11	1
Alcoholism—Acute & Chronic ..	1	..	..	..	1	..
Lymphangitis & Lymphadenitis	6	4	4	1	15	..
Chronic Metallic and Drugs Intoxications	..	..	1	..	1	..
Total	10	13	19	4	46	5
DISEASES OF NERVOUS SYSTEM.						
Peripheral Neuritis	1	1	2	1	5	..
Sciatica	1	..	2	..	3	..
Other forms of Neuritis and Neuralgia	2	1	3	..	6	..
Lesions of Peripheral Nerves ..	2	..	..	..	2	..
Myelitis	..	..	1	..	1	1
Disseminated Scherosis . ..	..	..	..	1	1	..
Tabes Dorsatis Locomotor Ataxia	1	..	1	..	2	..
Meningitis (except Meningococal or Tuberculous)	..	1	4	..	5	5
Cerebral Hœmorrhage—Thrombosis and Embolism ..	..	..	4	..	4	4
Cerebral Abscess	..	1	..	..	1	1
Paralysis Agitans & Post-encephalitic Parkinsonism ..	..	2	1	..	3	..
Intracranial Tumours	1	1	..	..	2	1
Hydrocephalus	1	..	..	..	1	1
Chorea	..	..	..	1	1	..
Epilepsy	..	1	1	..	2	..
Migraine	1	..	..	..	1	..
Hysteria and Neurasthenia ..	..1	1	..	..	2	..
Insanity and Idiocy	1	1	3	2	7	1
Other Diseases of the Nervous System	..	..	2	..	2	..
Hemiplegia	..	1	..	2	3	..
Total	12	11	24	7	54	14
DISEASES OF THE CIRCULATORY SYSTEM.						
Acute Endocarditis and Myocarditis	2	1	3	1	7	1
Chronic Valvular Diseases of the Heart	1	2	11	2	16	8
Myocardial Degeneration ..	2	3	10	3	18	8
Congenital Heart Lesions ..	..	1	..	..	1	1
Pericarditis	..	1	..	..	1	1
Angina Pector	2	..	..	..	2	..
Arteris Sclerosis..	..	..	1	..	1	1
Phlebitis Thrombosis and Embolism	1	1	1	..	3	..
Varicose Veins	1	..	..	..	1	..
Total	9	9	26	6	50	20
DISEASES OF THE RESPIRATORY SYSTEM.						
Bronchitis Acute	2	6	8	3	19	..
Bronchitis Chronic	1	2	8	1	12	1
Bronchiectasis	2	..	2	..	4	:
Asthma	2	4	14	..	20	..
Pneumonia Lobar	1	13	9	4	27	3
Do. Broncho	3	3	6	3	15	12
Do. Hypostatic ..	1	2	1	..	4	1
Pleurisy—Dry	..	1	1	..	2	..
Do. with effusion ..	1	4	3	..	8	..
Other Diseases of Respiratory System	..	2	1	..	3	..
Total	13	37	53	11	114	17

RETURN OF DISEASES AND DEATHS AT THE COLONIAL WAR MEMORIAL HOSPITAL FOR THE YEAR 1935.—*continued.*

Disease.	Admissions.					Deaths.
	Europeans.	Fijians.	Indians.	Others.	Total.	
DISEASES OF ALIMENTARY SYSTEM.						
Stomatitis	..	..	1	..	1	..
Disease of Teeth and Gums	26	..	8	9	43	1
Dyspepsia—Acute and Chronic and Functional Gastric Disorders	4	5	7	1	17	..
Acute Gastritis	2	5	3	2	12	..
Peptic Ulcer Gastric	1	2	1	2	6	1
Do. Duodenal	2	1	2	1	6	..
Jejunal after Gastric-Eriterostomy	..	..	1	..	1	..
Constipation	..	4	5	..	9	..
Diarrhœa	..	6	9	3	18	..
Enteritis and Gastro-enteritis	2	15	1	3	21	3
Food Poisoning	1	8	1	1	11	..
Intestinal Obstruction	..	..	2	..	2	..
Visceroptosis	1	..	..	..	1	..
Intussusception	1	..	..	..	1	..
Colitis	3	..	3	..	6	..
Diverticulosis & Diverticulitis	2	..	1	1	4	..
Intestinal Parasites	2	8	12	1	23	..
Perianal Ischio-rectal Abscess	..	..	8	..	8	..
Anal Fissure and Fistula	..	2	2	1	5	..
Hæmorrhoids & Rectal Prolapse	2	..	12	3	17	1
Amœbic Hepatitis & Hepatic Abscess	2	..	2	..	4	1
Catarrhal Jaundice	2	..	2	1	5	..
Cirrhosis of Liver	1	1	6	3	11	4
Cholecystitis and Cholangitis	5	3	10	2	20	1
Cholelithiasis	1	..	3	..	4	..
Acute Pancreatitis	..	..	1	..	1	..
Other Diseases of Alimentary System	..	..	3	..	3	..
Total	60	60	106	34	260	12
DISEASES OF APPENDIX AND PERITONEUM.						
Appendicitis—Chronic & Recurrent	22	1	13	6	42	..
Appendicitis—Subacute	8	2	3	1	14	..
Do. Simple acute	2	2	2	2	8	..
Do. with localised abscess	1	..	..	1	2	..
Do. with general peritonitis	..	..	1	..	1	1
Peritoneal Adhesions	1	..	1	..	2	..
Total	34	5	20	10	69	1
HERNIA.						
Inguinal Hernia—Oblique or Indirect	2	5	2	1	10	..
Inguinal Hernia—Direct	2	2	5	1	10	..
Umbilical Hernia	..	..	1		1	
Ventral Hernia	..	..	2	1	3	..
Strangulated Hernia	..	1	..	..	1	..
Other type Hernia	1	..	..	..	1	..
Total	5	8	10	3	26	..
DISEASES OF URINARY SYSTEM.						
Acute Nephritis	..	..	3	1	4	..
Chronic Nephritis	..	4	2	..	6	3
Hydronephrosis & Pyonephrosis	1	..	..	..	1	..
Pyelitis	1	1	7	2	11	..
Perinephritis and Perinephric Abscess	..	1	1	..	2	..
Polycystic Kidney	..	..	1	..	1	1
Urinary Calculi Renal	1	..	2	..	3	..
Cystitis—Acute	1	..	1	..	2	..
Do. Chronic	5	..	..	..	5	..
Urethral Stricture	..	..	1	..	1	..
Other Diseases of Urinary System	4	..	4	..	8	..
Total	13	6	22	3	44	4

Disease.	Admissions.					Deaths.
	Europeans.	Fijians.	Indians.	Others.	Total.	
DISEASES OF MALE ORGANS.						
Phimosis and Paraphimosis	2	..	1	1	4	..
Hydrocele	1	7	6	3	17	..
Encysted Hydrocele of the Cord	..	1	..	..	1	..
Varicocele	..	3	1	1	5	..
Spermatocele	..	..	1	..	1	..
Epididmyitis and Orchitis	2	1	3	1	7	..
Torsion of the Spermatic Cord	..	..	..	..	..	..
Enlarged Prostate Gland	4	..	2	..	6	..
Elephantiasis of Scrotum	..	1	1	..	2	..
Total	9	13	15	6	43	..
DISEASES OF PREGNANCY LABOUR & THE PUERPERIUM.						
Normal Pregnancy	..	6	16	5	27	..
Normal Labour	1	88	68	44	201	1
Displacement of the Pregnant Uterus	..	..	1	..	1	..
Abortion or Miscarriage	9	10	8	5	32	..
Premature Labour	..	2	..	..	2	..
Hydatidiform Mole	1	..	..	..	1	..
Accidental Hæmorrhage	..	..	1	..	1	..
Toxæmia of Pregnancy-Hyperemesis Gravidarum	2	2	2	1	7	..
Toxæmia of Pregnancy-Eclampsia	..	..	1	..	1	1
Other Diseases occurring during pregnancy	3	1	8	..	12	..
Abnormal Presentations	..	..	1	..	1	..
Cæsaran Section	2	..	..	..	2	..
Still-born	..	3	3	..	6	6
Reatained Placenta	4	..	1	..	5	..
Puerperal Sepsis	..	2	3	1	6	4
Total	22	114	113	56	305	12
DISEASES OF WOMEN						
Disorders of Menstruation	1	..	5	..	6	..
Pruritis Vulvæ	..	..	1	..	1	..
Sterility	1	..	..	..	1	..
Retroversion of Uterus	4	..	7	1	12	..
Cystocele and Rectocele	1	..	..	1	2	..
Uterine Prolapse	1	..	..	..	1	..
Infections of Vulva and Vagina	..	..	3	..	3	..
Other Lesions of Vulva & Vagina	..	2	..	..	2	..
Vaginal Fistulæ	1	..	1	2	4	..
Chronic Endometritis and Endocarvicitis	4	1	10	..	15	..
Chronic Metritis-Fibrisis Uteri	1	..	2	..	3	..
Salpingitis and Copheritis	3	3	21	2	29	..
Pelvic Cellulitis—Parametritis	..	2	2	..	4	1
Benign Uterine Tumours	1	..	1	1	3	..
Benign Ovaricum Tumours and Cysts	1	1	2	1	5	..
Total	19	9	55	8	91	1
DISEASES OF THE BREAST.						
Acute Mastitis & Breast Abscess	..	..	3	1	4	..
Benign Tumours and Cysts of Breast	..	..	..	1	1	..
Total	..	..	3	2	5	..
DISEASES OF NEWBORN, INFANCY & EARLY CHILDHOOD						
Asphyxia Neonatorum	..	1	..	..	1	1
Other Congenital malformations	1	1	..	..	2	..
Prematurity	..	2	2	..	4	4
Malnutrition and Marasmus	..	3	2	2	7	3
Infantile Convulsions	..	2	..	2	4	..
Born in Hospital	1	84	68	44	197	..
Admitted with mother not ill	..	1	1	1	3	..
Total	2	94	73	49	218	8

RETURN OF DISEASES AND DEATHS AT THE COLONIAL WAR MEMORIAL HOSPITAL FOR THE YEAR 1935.—*continued.*

Disease.	Admissions.					Deaths.
	Europeans.	Fijians.	Indians.	Others.	Total.	
Diseases of Bones, Joints, Muscles and Tendons.						
Acute Osteomelitis	..	3	..	1	4	..
Chronic & Relapsing Osteomylitis	..	1	..	..	1	..
Periostitis	..	..	2	..	2	..
Other Diseases of Bones	..	..	1	..	1	..
Synovitis	2	3	2	1	8	..
Acute Arthritis	..	1	5	..	6	..
Chronic Arthritis Osteo-Arthritis & Rheumatoid Arthritis	2	6	8	2	18	..
Ankylosis of Joints	..	2	1	..	3	..
Fibrositis and Myositis	..	1	..	1	2	..
Teno-synovitis	..	1	..	..	1	..
Bursitis	2	..	1	..	3	..
Ingrowing Toe-nails	3	..	..	..	3	..
Total	9	18	20	5	52	..
Affections due to External Causes.						
Poisoning (other than food poisoning)	1	2	..	3	6	..
Food Poisoning	1	..	..	..	1	..
Burns and Scalds	5	3	15	3	26	2
Bruises, Abrasions & Contusions	5	25	27	6	63	..
Wounds Incised, Punctured or Contused	8	43	32	12	95	..
Septic Wounds	13	27	11	10	61	..
Injuries from Firearms and Explosive	..	..	4	..	4	..
Embedded Foreign Bodies	3	4	2	2	11	..
Injuries from Electricity and Lighting	..	1	1	..	2	..
Heat Stroke and Sunstroke	..	..	1	..	1	..
Scalp Wounds	2	4	6	1	13	..
Insect bites and other stings from poisonous animals	..	3	..	1	4	..
Shock following injury	..	..	..	2	2	..
Injuries to Muscles, Tendons and Ligaments	2	1	3	1	7	..
Sprains of Joints	1	3	2	1	7	..
Dislocations of Joints	..	1	..	..	1	..
Head Injuries and Cerebral Concussion	4	7	7	4	22	..
Injuries to Chest	..	..	1	..	1	..
Injuries to Spine and Back	..	2	..	..	2	..
Infection of the Hands	1	5	3	..	9	..
Fracture of Jaw & Facial Bones	3	..	2	..	5	1
Fracture of—						
Skull	1	..	1	..	2	1
Spinal column	..	1	2	1	4	1
Ribs	..	1	..	..	1	..
Clavicle	..	1	2	..	3	..
Humerus	1	..	1	2	4	..
Radius	..	1	2	..	3	..
Ulna	..	..	1	..	1	..
Radius and Ulna	5	1	1	1	8	..
Carpus Metacar Pus and Phalanges	1	..	1	..	2	..
Femur	6	..	3	1	10	1
Tibia	3	..	2	..	5	..
Fibula	1	1	1	..	3	..
Tibia and Fibula	2	2	1	1	6	1
Tarsus Metatarsus and Phalanges	1	1	1	..	3	..
Mal-united Fractures	1	..	..	..	1	..
Malformations after Injury or Diseases	1	1	2	..	4	..
Total	72	141	138	52	403	7

Disease.	Admissions.					Deaths.
	Europeans.	Fijians.	Indians.	Others.	Total.	
Diseases of the Skin.						
Furnculosis	2	..	1	1	4	..
Carbuncle	2	..	4	1	7	1
Abscess	3	25	22	13	63	..
Cellutitis	1	6	1	2	10	1
Erysipelas	1	1	..	..	2	..
Dermatitis	4	4	8	3	19	3
Impetigo	..	1	1	..	2	1
Scabies	4	5	3	2	14	2
Ringworm	1	1	..	..	2	..
Sinuses	..	..	1	..	1	..
Ulcers	3	7	4	1	15	..
Gangrene	..	1	1	..	2	2
Elephantiasis	..	1	..	..	1	..
Urticaria	..	..	1	..	1	..
Other Skin Diseases	7	11	2	4	24	..
Total	28	63	49	27	167	10
Diseases of the Eye.						
Conjunctivitis	1	3	2	..	6	..
Trachoma	..	2	2	..	4	..
Plerygium	1	9	1	1	12	..
Keratitis	..	..	2	1	3	..
Iritis	..	..	2	..	2	..
Glaucoma	..	3	..	..	3	..
Cataract	..	8	14	2	24	..
Corned Ulcer and Sequelæ	..	2	10	1	13	..
Retinitis	..	..	1	..	1	..
Optic Atrophy Primary	..	1	..	..	1	..
Injury to Eye	2	3	6	2	13	..
Foreign body in Eye	1	..	..	1	2	..
Panophthalmitis	..	1	..	..	1	..
Diseases of the Lids	1	6	2	..	9	..
Other Diseases of the Eye	3	4	8	..	15	..
Total	9	42	50	8	109	..
Diseases of the Ear, Nose and Throat.						
Eczema and Furuncle of External Auditory Meatus	..	..	2	..	2	..
Foreign Bodies in Ear	..	1	1	..	2	..
Acute Otitis Media	3	1	7	1	12	1
Mastoiditis	1	..	7	..	8	..
Chronic Otitis Media	2	..	6	..	8	..
Labyrinthitis	..	..	1	..	1	..
Epistaxis	..	1	..	..	1	..
Hypertrophy of Nasal Turbinate Bones	..	..	..	1	1	..
Maxillary Sinusitis	1	2	..	..	3	..
Pharyngitis	3	..	2	1	6	..
Acute Tonsillitis	10	1	6	6	23	..
Enlarged Tonsils and Adenoids	18	2	11	8	39	..
Laryngitis	..	..	..	1	1	..
Peri Tonsillar Abscess Quinsy	..	..	1	..	1	..
Parasites in Ear, Nose & Throat	..	1	..	..	1	..
Total	38	9	44	18	109	1
Ill-defined Diseases.						
Admitted for Investigation or Observation	12	28	39	20	99	..
Pyrexia of Unknown Origin	2	1	..	..	3	..
Orphans	..	8	..	..	8	..
Parent admitted with Child not ill	..	5	13	7	25	..
Other ill-defined Diseases	..	..	1	1	2	..
Debility	3	7	4	1	15	..
Total	17	49	57	29	152	..

SURGICAL OPERATIONS PERFORMED AT THE COLONIAL WAR MEMORIAL HOSPITAL DURING THE YEAR 1935.

	No.
Blood Vessels—	
Ligature of arteries	2
Blood transfusion	20
Venesection	7
Collection of blood for Kahn tests	66
Blood specimens collected	27
Dissection of arterio-venous aneurysm	2
Muscle, Bursæ, Tendons and Nerves—	
Suturing of tendons	5
Alcoholic injection of nerves	6
Gasserian operation	1
Peri-arterial sympathectomy	1
Excision of ganglion	2
Bones—	
(*a*) of head—	
Trephining of the skull	2
Elevation of depressed malar fracture	1
Exploration of temporosphenoidal abscess	1
(*b*) Spine—	
Lumbar puncture	10
Cisternal puncture	2
(*c*) Fractures—	
Reduction and setting of fractures under general anæsthetics	15
Pegging of fracture of humerus	1
Plating of fracture of femur	1
Resection of tumour of fibula	1
Insertion of Kirschner's wire & extension	2
Osteo-myelitis of the humerus	1
Manipulation of fractures	1
Application of plasters	24
Application of splints	11
Removal of plasters	5
(*d*) Amputations—	
Of fingers	4
Of legs	4
Of toes	1
Joints—	
Aspiration of the knee-joint	4
Manipulation of the knee	4
Manipulation of shoulder-joint	3
Reduction of dislocated shoulder-joint	2
Lymphatic System—	
Excision of glands of neck	3
Aspiration of glands of neck	2
Excision of glands of the groin	1
Excision of retro-peritoneal glands	1
Kondoleon's operation	2
Alimentary System—	
Mouth, Tongue and Lips—	
Teeth extractions	323
Suturing of lips	7
Stomach and Intestines—	
Appendectomy	71
Gastro-enterostomy	6
Laparotomy	11
Colostomy	3
Freeing of adhesions	7
Colonic irrigation	2
Paracentesis abdominis	32
Intestinal obstruction	2
Herniæ—	
Inguinal, radical cure	21
Ventral	1
Liver, Gall-bladder, Spleen and Pancreas—	
Liver abscess	1
Cholecystectomy	4
Cholecystostomy	2
Splenectomy	1
Rectum and Anus—	
Incision of ischio-rectal abscess	6
Fistula-in-ano	3
Excision of hæmorrhoids	14
Carbolic injection of hæmorrhoids	15
Proctoscopy	1
Sigmoidoscopy	7
Dilatation of sphincter ani	1
Rectal examinations	12
Urinary System—	
Nephrectomy	1
Implantation of ureter into colon	1
Cystoscopy	11
Dilatation of the urethra	5
Supra-pubic cystotomy	6
Catheterization	1
Irrigation of the bladder	4
Male Genital Organs—	
Circumcision	33
Radical cure of hydrocele	18
Orchidectomy	2
Excision of spermatocele	1
Radical cure of varicocele	3
Tapping of hydrocele	8
Incision of the scrotum	3
Prostatectomy	1
Gynæcological—	
Vulva—	
Excision of Bartholin's cyst	1
Peri-neorrhaphy	1
Episiotomy	1
Vaginal—	
Repair of recto-vaginal fistula	3
Anterior colporrhaphy	1
Posterior colporrhaphy	1
Insertion of pessaries	3
Perineal sutures	28
Pelvic examinations	86
Uterus—	
Cæsarean section	2
Hysterectomy total	3
Hysterectomy subtotal	2
Myomectomy	1
Currettage	24
Ventro-suspension	4
Induction of labour	1
Manual removal of placenta	7
Cauterization of the cervix	1
Dilatation of the cervix	4
Replacement of retro-verted uterus	1
Ovaries and Tubes—	
Ovariotomy	2
Ovariectomy	2
Excision of ovarian cysts	7
Salpingectomy	8
Fœtus—	
Instrumental delivery	5
Craniotomy	1
Breast—	
Excision of tumour	2
Incision of abscess	1
Radical removal of breast	3
Thorax—	
Thoracotomy	2
Paracentesis thoracis	10
Aspiration of swelling	1
Eye—	
Entropion	24
Needling of lens	28
Cataract extractions	37
Iridotomy	4
Paracentesis	5
Trephining	7
Pterygium	15
Excision of globe	1
Incision of globe	2
Cauterization	10
Removal of stitches	2
Enucleation	5
Examination of lacerated eye	1
Excision of tumour	1
Ear, Nose and Throat—	
Tonsillectomy	44
Adenoidectomy	4
Cauterization of nasal ulcer	2
Mastoidectomy	6
Pernasal operation on the maxillary antrum	4
Removal of tumour from earlobes	1
Exploration of maxillary antrum	1
Plastic operation on nose	1
Nasal examinations	6
Excision of nasal polypus	1
Skin Grafts—	
Pedicle graft	13
Fascia graft from leg	1
Skin grafts	10
Skin—	
Excision of rodent ulcer	5
Removal of toe-nail	5
Wedge-excision of ingrowing toe-nail	2
Removal of finger-nail	3
Removal of corns	1
Suturings	125

SURGICAL OPERATIONS PERFORMED AT THE COLONIAL WAR MEMORIAL HOSPITAL DURING THE YEAR 1935—*continued.*

Septic areas—Incised	223
Injections—	
Arsenical preparations	842
Bismuth preparations	20
Mercurochrome	11
Flavine	7
Indigo-carmine	1
Brilliant green	2
Glycerine	3
Glycerine and Iodine	6
Collosal Iodine	6
Quinine and Urethane	1
Calcium sandos	7
Oscol stibium	2
Manganese butyrate	5
B.I.P.P.	9
S.U.P.	13
Autogenous blood	5
Gum-salines	17
Dilester oil	18
Sera—	
Anti-diphtheritic	20
Anti-dysenteric	19
Anti-gas gangrene	8
Anti-pneumococcal	3
Anti-pueperal	17
Anti-staphylococcal	7
Anti-streptococcal	8
Anti-tetanic	282
Horse serum	3
Vaccines—	
Autogenous vaccine	15
Pertussis vaccine	19
Staphylococcal vaccine	1
T.A.B. vaccine	33

New Growths—	
Excision of papilloma	2
Excision of cysts	9
Excision of lymphangioma	2
Excision of melanoma	1
Excision of fibroma	1
General—	
Excision of scar-tissue	6
Aspiration of scapula abscess	1
Aspiration of swelling of the thigh	3
Antrum irrigations	2
Insertion of Carrol-Dakin tubes	1
Removal of tent	3
Breaking down adhesion of shoulder	2
Breaking down adhesion of knee	1
Foreign Bodies—	
Extracted from	
the eye	7
the ear	4
the throat	2
the neck	1
the arm	3
the hand	7
the leg	5
the foot	7
the toe	1
the nose	3
the finger	1
Grand total	3,203

Anæsthetics—	
General	597
Local	278
Spinal	84
Evipan	43
Rectal	1
Total	1,003

LIST OF OPERATIONS ON IN-PATIENTS AT LAUTOKA HOSPITAL DURING THE YEAR 1935.

Skin graft	11
Radical cure of maxillary empyema	2
Radical cure of frontal sinusitis	3
Tonsillectomy and adenoidectomy	37
Repair of cleftpalate	2
Schwartz mastoid	5
Radical mastoid	3
Thyroidectomy	3
Excision of tuberculous glands of neck	10
Lid splitting and grafting	4
Enucleation of eyeball	5
Extraction of cataract	1
Eventration of orbit	1
Section of cornea for hypopyon	1
Iridectomy	1
Amputation of digits	2
Amputation at site of election	4
Amputation through thigh	2
Plastic of fingers	1
Amputation of scrotum	1
Kondoleon's operation	3
Arthrotomy of elbow	1
Arthrotomy of knee	3
Arthrotomy of hip	1
Subtrochanteric osteotomy	1
Lengthening of tendo achillis	2
Resection of rib and thoracotomy	2
Resection of bone	17
Radical cure of inguinal hernia (one strangulated)	32
Radical cure of ventral hernia	4
Appendicetomy	14

Gastrectomy	1
Gastro-enterostomy	9
Suture of perforated ulcer of colon	1
Whiteheads operation	3
Ligature or suture and excision of hæmorrhoids	54
Excision of fistula in ano	13
Intestinal anastomosis	2
Cholecystectomy	2
Cholecystostomy	1
Laparotomy and drainage	15
Radical cure of hydrocele	26
Orchidectomy	2
Dilatation of urethra	18
Perinæal cystotomy	1
Suprapubic prostatectomy	1
Embryotomy	2
Forceps delivery	8
Induction of abortion or labour	4
Dilatation and curettage of uterus	70
Amputation of cervix uteri	1
Posterior colpotomy	5
Radical cure of cystocele, &c.	1
Salpingostomy	1
Salpingectomy	11
Ventrisuspension of uterus	17
Ovariotomy	11
Hysterectomy	8
Ventrifixation	1
Cæsarian section	4
Other operations under anæsthesia	810
Total operations under anæsthesia	1,282

TABLE SHOWING NUMBER AND CAUSES OF ADMISSION AND DEATHS AT LAUTOKA HOSPITAL, LEVUKA HOSPITAL, PROVINCIAL HOSPITALS, PLANTATION HOSPITALS, AND SUVA GAOL INFIRMARY.

Disease.	Lautoka.		Levuka.		Rewa.		Mba.		Na'onga.		Ta'uni.		Savusavu.		Ra.		Tholo East.		Ma'uata.		Mbua.		Ka'avu.		Rotuma.		Lomaloma.		Suva Gaol.		Nausori Plant.		Ra'wai Plant.		Nandi.		Penang.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
GENERAL DISEASES.																																								
Mumps	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox	1	..	1	..	4	..	..	..	..	..	1	..	..	..	7	..	3	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	23	..
Diphtheria	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	8	..
Pertusis	..	..	..	..	..	..	..	..	5	..	8	..	..	..	2	2	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	1	..	..	..	5	..	22	3
Influenza	12	..	16	..	10	..	24	..	5	..	47	..	4	..	6	..	8	..	12	..	5	..	4	..	3	..	33	..	7	..	..	..	35	..	22	..	20	..	273	..
Measles	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever	12	4	1	1	13	2	..	..	9	2	..	..	9	2	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	4	6	1	85	16
Dysentery	145	12	..	..	28	5	72	15	66	7	7	..	..	..	95	18	8	1	9	..	..	..	6	1	..	..	..	..	..	..	..	..	49	1	87	5	65	2	637	67
Pneumonia	27	12	2	..	20	4	28	3	6	2	..	..	2	..	5	1	2	1	13	5	3	2	2	..	8	2	..	..	..	..	..	..	8	..	13	3	10	1	149	36
Gonorrhœa	40	..	..	..	..	..	..	..	3	..	3	..	..	..	..	..	..	..	13	..	2	..	..	..	..	..	..	..	2	..	..	..	7	..	17	..	..	..	87	..
Septicæmia	7	3	..	..	1	1	2	1	..	..	..	..	..	..	..	..	1	1	8	2	1	1	..	..	..	..	..	..	..	..	..	..	2	1	5	2	1	1	28	13
Tetanus	1	..	2	2	2	2	..	..	..	..	1	..	..	..	1	..	..	..	3	2	..	..	..	..	1	..	1	1	..	..	..	..	..	..	..	..	..	..	12	7
Tuberculosis	73	5	12	1	14	5	7	1	5	..	4	..	5	1	7	4	2	1	15	4	12	2	4	..	..	..	2	1	3	..	..	..	3	1	12	3	1	1	181	30
Yaws	..	..	..	..	6	..	11	..	4	..	13	1	..	..	8	..	13	..	17	..	5	..	31	..	6	2	5	..	..	..	..	..	..	..	206	..	1	..	326	3
Syphilis	17	3	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	7	..	..	..	..	..	8	..	..	..	..	..	..	..	1	..	..	..	..	..	34	3
Leprosy	16	..	5	..	3	1	..	..	1	..	..	..	5	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	36	1
Anæmia	159	4	1	..	..	..	1	..	..	..	..	..	2	..	..	..	2	..	3	..	1	..	..	..	..	..	3	..	2	..	..	..	3	..	2	..	2	1	181	5
Pyæmia	1	1	..	..	..	..	..	..	..	..	4	1	1	1	..	..	..	..	4	..	1	1	..	..	5	..	..	..	..	..	..	..	..	..	..	..	2	..	18	4
Rheumatism	10	..	4	..	..	..	2	1	5	..	1	..	1	..	2	..	1	..	5	..	3	..	1	..	8	..	3	..	..	..	..	..	16	..	15	..	3	..	80	1
New Growths	44	2	..	..	5	1	..	..	6	..	2	..	..	..	4	..	..	..	4	..	2	..	..	..	4	..	1	..	..	..	..	..	..	..	1	..	..	..	73	3
Erysipelas	3	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..
Diabetes	39	2	1	..	3	..	..	..	5	..	..	..	..	..	1	..	1	..	9	2	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	62	4
Malaria	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dengue	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	8	..
Debility	1	..	14	..	23	2	6	1	..	..	1	1	2	..	1	..	..	..	11	..1	4	..	2	..	3	..	2	..	10	..	..	..	5	1	1	..	2	..	88	6
LOCAL DISEASES.																																								
Diseases of—																																								
Nervous System	49	8	11	..	9	3	6	2	8	2	2	..	2	2	11	3	1	..	24	2	4	..	4	..	5	..	..	..	1	..	..	..	10	5	4	..	5	1	156	28
Eye	53	..	7	..	4	..	8	..	4	..	10	..	2	..	5	..	2	..	15	..	1	..	7	..	..	..	2	..	1	..	..	..	2	..	11	..	4	..	138	..
Ear	15	..	1	..	3	..	1	..	1	..	8	..	1	..	..	..	1	..	6	..	1	..	2	..	..	..	3	..	..	..	..	..	4	..	4	..	1	..	52	..
Nose	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..
Circulatory System	59	18	6	1	14	1	..	..	5	2	5	1	4	1	3	..	3	..	15	6	2	1	..	..	..	..	..	..	4	..	..	..	6	1	10	..	2	1	138	33
Respiratory System	122	1	27	4	15	2	4	..	7	..	68	4	9	..	6	1	3	1	48	..	6	..	6	..	22	2	22	..	2	..	..	..	23	2	10	..	6	..	406	17
Digestive System	284	11	20	..	35	5	9	..	19	6	30	2	2	..	17	..	6	..	35	..	4	..	3	..	16	1	4	..	5	..	..	..	52	1	45	2	22	2	608	30
Lymphatic System	10	..	..	..	29	..	12	..	2	..	22	..	5	..	12	..	2	..	31	..	..	..	..	..	7	..	1	..	1	..	..	..	3	..	2	..	1	..	140	..
Urinary System	43	1	3	..	2	..	1	..	1	..	5	..	1	1	1	..	1	..	15	..	2	..	1	..	..	..	..	..	..	..	..	..	10	..	5	1	2	..	93	3
Male Organs	56	..	10	..	..	..	..	..	4	..	..	..	7	..	4	..	20	..	3	..	2	..	..	..	3	..	..	..	1	..	..	..	6	..	6	..	3	..	125	..
Female Organs	169	..	3	..	5	..	6	..	4	..	1	..	..	..	6	1	..	..	11	..	2	..	..	..	10	..	..	..	..	..	..	..	1	..	..	..	3	..	221	1
Organs Locomotion	27	1	..	..	..	..	2	..	4	..	..	..	..	..	..	..	..	..	7	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	3	..	1	..	47	1
Cellular Tissues	102	..	7	..	17	..	25	..	20	1	14	..	4	..	11	..	1	..	103	..	..	..	1	..	1	..	18	..	7	..	..	..	35	..	35	..	..	..	401	1
Skin	54	..	2	..	9	..	6	..	21	..	28	..	22	..	2	..	5	..	17	..	17	..	12	..	10	..	1	..	2	..	..	..	10	..	9	..	2	..	229	..

Injuries—General ..	27	2	5	..	30	1	5	..	..	..	..	..	1	1	..	..	..	..	11	1	17	..	1	..	11	..	1	..	..	..	..	..	12	1	6	..	4	..	131	6
Local....	62	..	87	1	2	..	28	..	23	..	30	..	7	..	20	..	27	..	49	..	15	..	28	..	3	..	4	..	17	..	1	..	38	..	31	..	37	..	509	1
Poisons	8	2	1	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..	17	2
Parasites	42	..	5	..	..	..	..	..	1	1	20	..	..	..	2	..	..	..	37	..	1	..	12	..	2	..	..	..	2	..	..	..	..	..	40	..	1	..	165	1
Parturition	131	1	..	..	15	..	..	..	20	1	20	..	2	..	6	..	45	..	11	..	..	..	11	..	..	..	6	..	..	..	..	..	..	..	3	..	..	..	270	2
Premature Birth ...	1	1	..	..	5	..	..	..	3	1	1	..	..	..	..	..	..	..	4	..	3	..	1	1	..	..	1	..	..	..	..	..	..	..	1	..	..	..	20	3
Unclassified	399	3	32	..	61	..	26	..	1	..	38	..	14	..	53	..	77	1	56	..	48	..	15	..	..	..	8	..	24	2	..	..	2	..	44	1	..	..	898	7
Lunacy	3	..	..	..	6	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	1	..	..	..	1	..	1	..	..	..	2	..	..	..	18	..
Grand Total	2335	97	287	10	398	35	293	24	269	25	394	10	114	9	298	30	237	6	647	25	174	7	155	2	143	8	122	2	93	2	2	..	347	14	682	21	213	11	7203	338
Out-patients.........	7,298		4,048		2,377		1,487		1,807		1,777		2.333		2,045		2,742		6,122		1,754		1,946		1,927		2,791		312		4,272		7,238		7,025		2,033		61,334	

MONTHLY MEANS FOR THE YEAR 1935, SUVA STATION, TAKEN AT 8. A.M. AND 2. P.M.

Months.	Mean Pressure in Inches. (Reduced to 32° Faht., 45° Lat. & M.S.L.		Air Temperature (F°)												Mean Dew Point. (Degrees)		Mean Vapour Pressure in Millibars.		Mean Relative Humidity (Saturation = 100)		Mean Amount of Cloud. (0—10)	
			Mean Dry Bulb.		Mean Wet Bulb.		Means of			Absolute Max. & Min.												
							Max	Min.	Mean.	Max.	Date.	Min.	Date.									
	8h.	14h.	8h.	14h.	8h.	14h.									8h.	14h	8h.	14h.	8h.	14h.	8h.	14h
January ..	29·750	29·704	78·4	82·4	75·3	76·5	84·4	74·5	79·4	88	12,19	71	19, 31		74·0	73·7	28·6	28·5	86·3	76·0	7·8	7·2
February .	29·810	29·762	80·3	85·2	76·3	78·3	87·3	75·3	81·3	94	15	69	6		74·5	75·4	29·3	30·1	83·0	73·0	5·1	5·9
March	29·795	29·740	80·7	85·3	76·7	78·3	87·4	75·9	81·7	92	5, 9, 10	74	22, 29		74·9	75·3	29·6	30·0	83·3	73·2	7·5	7·8
April	29·875	29·810	77·8	82·2	74·4	76·3	85·0	73·4	79·2	89	4, 6, 12	69	21		72·8	73·5	27·6	28·4	85·0	76·2	6·4	7·5
May	29·945	29·885	75·7	79·7	71·4	72·9	81·1	71·7	76·6	87	21	68	16, 17		69·2	69·3	24·5	24·6	80·5	71·4	6·8	7·4
June	29·965	29·901	74·5	79·5	71·7	73·6	81·0	71·1	76·1	86	5	67	5, 30		70·5	70·7	25·4	25·8	86·8	75·4	6·9	7·4
July	29·921	29·859	73·5	78·7	70·8	72·5	80·0	70·4	75·2	87	29	67	22, 23, 25		69·3	69·4	24·7	24·6	87·1	73·7	6·5	6·7
August ...	30·000	29·937	72·9	76·7	70·0	71·7	78·5	69·6	74·1	85	6	64	3		68·2	68·9	23·8	24·4	85·7	77·6	7·8	7·8
September	29·945	29·879	74·0	78·1	71·0	73·0	79·9	70·7	75·3	88	24	63	22		69·4	70·5	24·7	25·6	85·9	77·9	8·2	7·9
October ..	29·947	29·884	76·3	79·6	73·2	74·0	81·4	72·2	76·8	88	26, 30	69	10, 12		71·6	71·2	26·5	26·2	85·6	76·3	8·3	8·0
November.	29·853	29·810	77·8	79·3	73·7	74·4	82·2	73·1	77·6	89	3	69	23		71·8	72·0	26·7	27·0	82·0	79·4	8·2	8·8
December	29·843	29·797	78·6	81·6	74·6	75·9	84·1	74·0	79·1	88	31	71	19, 26		72·6	73·5	27·5	28·2	82·5	76·9	7·6	7·7
Year ..	29·887	29·831	76·7	80·7	73·3	74·8	82·7	72·7	77·7	94	15/2/35	63	22/9/35		71·2	72·0	26·6	27·0	84·5	75·6	7·3	7·5

Months.	Total Raintall Inches	Mean Bright Sunshine (hours and tenths.)	Weather. No. of days of							Wind. Number of Observations of																	
			Hail.	Thndr Strms	Gales	Clear Sky		Overcast		N.		N.E.		E.		S.E.		S.		S.W.		W.		N.W.		Calm.	
						8h.	14h	8h.	14h	8h.	14h	8h.	14h	8h.	14h	8h.	14h	8h.	14h	8h.	14h	8h.	14h	8h.	14h	8h.	14h
January	22·37	5·7	0	0	0	1	1	15	14	4	3	11	9	6	11	0	2	0	2	1	4	4	0	0	0	5	0
February ...	6·52	8·0	0	7	0	1	0	2	3	4	2	3	5	3	4	2	7	0	6	1	3	3	0	0	0	12	1
March	11·34	5·4	0	3	0	1	0	14	15	8	1	4	8	3	6	2	7	0	4	0	3	0	0	1	1	13	1
April	12·78	5·1	0	4	0	0	1	13	13	6	3	9	8	2	8	1	5	1	2	0	3	1	1	0	0	10	0
May	8·94	4·8	0	0	0	2	0	14	12	6	0	8	3	6	14	5	7	1	2	0	2	2	0	0	1	3	2
June	4·67	4·4	0	0	0	3	0	14	15	5	2	5	7	5	14	2	5	1	2	0	0	0	0	0	0	12	0
July	8·55	5·1	0	1	0	4	2	13	13	6	3	7	8	3	9	3	7	1	3	1	0	0	1	0	0	10	0
August	16·59	3·0	0	1	0	4	1	18	19	4	0	6	4	10	16	4	7	0	3	0	1	1	0	0	0	6	0
September ..	14·05	3·2	0	3	0	1	0	18	17	2	1	6	4	4	13	6	9	1	1	0	2	0	0	0	0	11	0
October	16·34	3·7	0	2	0	1	1	20	18	1	0	9	5	12	19	3	4	1	2	1	1	1	0	2	0	1	0
November...	26·55	2·8	0	4	0	0	0	16	23	1	0	3	3	7	10	9	12	2	3	0	1	0	0	2	1	6	0
December ..	14·92	4·9	0	1	0	0	1	19	17	1	2	10	5	16	16	2	5	0	1	1	1	0	1	0	0	1	0
Yeai	163·62	4·7	0	26	0	18	7	176	179	48	17	81	69	77	140	39	77	8	31	5	21	12	3	5	3	90	4

EXTREMES FOR THE YEAR.

Highest Pressure—30·146″ on July 9th at 8 a.m.
Lowest Pressure—29·564″ on April 28th at 2 p.m.
Highest Temperature in Shade—94° on February 15th
Lowest Temperature in Shade—63° on September 22nd.

Greatest Range—19° on February 27th, June 5th and July 25th.
Least Range—1° on July 26th.
Most Rain in 24 hours—7·53″ on November 24th
Maximum wind velocity—37 m.p.h. on March 13th at 1418.